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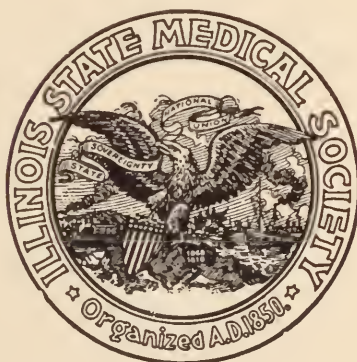
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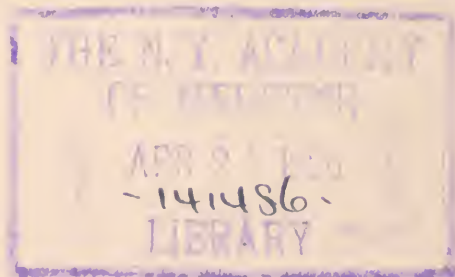
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JULY TO DECEMBER, 1925



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July to December, 1925

This is an alphabetical index of articles and discussions arranged by leading words. It contains occasional cross references. Names of authors and men who discussed the papers are also included. Details of society proceedings, including the titles

of papers read, officers elected, etc., can be located in proceedings under Societies, Editorials, News of the State, Marriages, Deaths. The subjects of editorials also appear alphabetically and are marked (E).

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Membership correspondence to Dr. Harold M. Camp, Monmouth, Ill.

Society proceedings and news items and changes in the mailing list to Dr. Henry G. Ohls, Managing Editor, 7626 Bosworth Avenue, Chicago.

Contributors will submit all copy for publication typewritten on standard size paper and double spaced. Copy not complying with this rule will be returned, if convenient.

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Editorial

RAW MILK VERSUS PASTEURIZED MILK

VITAMINS NECESSARY FOR PERFECT RESULTS FROM THIS COMPLICATED FLUID ARE FOUND ONLY IN THE RAW, CLEAN PRODUCT.

NATURAL MILK WHEN CLEAN IS AN INCOMPARABLE FOOD, AND PASTEURIZATION IS AT BEST ONLY A MAKESHIFT SAFEGUARD.

TO PASTEURIZE CERTIFIED MILK WOULD BE AS HEINOUS A CRIME AS TO GILD THE LILY.

As clean, raw, natural milk is in itself the one perfect food the public should be educated into demanding this product.

Budding agitation on the part of some public health officials for further and standardized pasteurization of milk, is a subject for disagreement. After all, pasteurization is not the *sine qua non* of the milk problem, but merely a temporary makeshift. Under existing conditions it is the nearest possible solution to this perplexing problem but it is not in any way the equivalent of the clean raw milk now on the market in ever increasing quantities and that is known as certified milk. *For certified milk meets a want in nutrition that cannot be supplied adequately by other foods.*

Argument may be advanced that it is impossible to produce in every municipality, certified milk on a great scale. In some localities this may be true, but certainly the contention does not apply to Chicago, where there is an ample quantity of the certified product.

Responsibility for the production of a clean milk is not simply one of milk commissions. Primarily this responsibility is one of the most important of municipal government. Milk is a necessity and is essential to the proper growth and development of the child. Milk constitutes the food for the young of all mammalia, and it is recognized as a complete food, containing in itself all the elements required to support life.

Because of these protean qualities, inherently, milk is a complicated fluid. So the less milk is

manipulated, and the more closely it is kept to the natural state and original content, the better milk will serve the ends for which it is intended. Any factor tending to alter in any way the physical or vital character of milk must be considered as destructive until proven to the contrary. Such has not been the finding with experiments dealing with heat or with chemicals. Under certain conditions and in certain ways the use of these external agents is a positive disadvantage and deteriorant. Nature insists that some of her foods are to be taken in the raw state and emphasize this insistence by a resultant failure in nutrition when such foods are subjected to a prolonged drying or heating.

Physical changes in milk may interfere with physiological body functions. For instance the pasteurization of milk,—boiling it, practically,—while destroying bacteria, also produces a different type of curd, and changes the form of the lactalbumin. In some cases such results may be beneficial, or at least not injurious. In others,—that minority requiring frequently special adaptation of food,—physicians are called in to manage this requirement. For just such cases, a supply of good, raw milk, is of unequalled benefit.

The effect of heat on the curd will depend upon the temperature and the time of subjection to the various degrees of heat. Prolonged heat may not only coagulate the albumin, but also destroy the vitamins. For that reason it is wise to add fruit juices to the diet when for a long time, heated milk is given to an infant. Many babies who do not thrive or who cease to thrive on heated milk, do well on a change to raw milk.

There is no argument as to the desirability of pasteurizing milk that is handled carelessly or in large bulk. It is a safeguard that should be applied, generally. The mass of the population is entitled to a supply of milk for ordinary household purposes that is free from contamination and pathogenic bacteria. Heating or pasteurizing will destroy these bacteria, but it is going much too far to insist that all milk shall be treated thus and that no raw milk shall be available for use because it may be dangerous. Raw milk may be employed to advantage if its use be properly controlled.

Even the best raw milk can be contaminated by careless handling in the home; and the worst raw milk, made much more dangerous. The

same thing holds good even with pasteurized milk. A false sense of security may lead to absence of all precautions. And as a consequence pernicious changes may occur, in such milk without warning of objectionable manifestations, such as souring, to denote what has taken place.

Imperfect pasteurization is worse than none, at all, and in a few cases where there is no proper oversight of pasteurization this protection may exist largely in name only. Unclean milk cannot be made clean by pasteurization. Confidence in pasteurization as a facile means by which unclean milk can be rendered as safe and wholesome as clean milk is confidence misplaced. Pasteurization lessens certain minor dangers but it certainly increases other and even greater evils. There is no method by which milk that has been contaminated from stable filth can be made perfectly safe for use as food for infants or adults, without destroying some of its constituents that are essential to good nutrition.

In fact pasteurization increases the danger of infection of the intestine with Welch's bacillus and other putrefactive organisms by destroying the lactic acid forming organisms which when present hinder the growth and development of the putrefactive flora. Destruction of these germs gives the putrefactive bacteria opportunity for unlimited growth and development under favorable conditions whether within or without the body.

Unfortunately the erroneous impression prevails that it matters little whether milk is clean or teeming with micro-organisms provided only that it is pasteurized.

Now pasteurization fails to destroy poisonous bacterial products found in unclean milk, and though it does put out of the way growing bacteria, it is ineffective against their spores.

In pasteurized milk there may be present the highly active poison produced by tubercle bacilli, and in quantity sufficient to give rise to marked symptoms of malnutrition. This has been shown definitely in animal experimentation. Unless used very quickly after pasteurization spores of the deadly Welch's bacillus and other dangerous organisms may multiply rapidly so that when used, pasteurized milk may actually introduce into the body of a sensitive infant more dangerous germs than were originally found in the raw milk before it was pasteurized.

In large cities, pasteurization of milk is neces-

sary with what is known as commercial milk. But with certified milk, pasteurization is both unnecessary and actually harmful. Ordinary commercial milk is produced under very unsanitary conditions, teeming with disease germs and barnyard filth. It is high time that the public should be informed of the fact that pasteurization does not make dirty milk either clean or safe and that pasteurized milk is even in some respects less safe and wholesome than dirty raw milk, provided germs of infectious diseases are absent. This statement cannot be repeated too often.

Pasteurization must be looked upon only as a temporary makeshift.

A partial solution of a bad problem, it is not the proper safeguard for infant feeding. On the contrary, certified or clean milk is the only rational solution of this most important question in human dietetics.

So-called certified milk is not to be compared with commercial milk. Certified milk means clean raw milk from healthy cows as determined by the tuberculin test and physical examination by a competent veterinarian: it is produced under rigid sanitary conditions regulating the care of the herd including its housing, the methods of production with proper supervision of the employes, and the careful bottling and distribution of the product. Proper supervision of milk production, distribution and consumption is of the utmost importance. Findings of this supervision are potent and forceful arguments in the feeding of certified raw milk.

In excellent proportions, milk contains all the elements needed by the growing child,—a statement that cannot be made truthfully in connection with any other known substance. And this statement holds true,—outside of the human breast—only of clean cow's milk as it flows from the original fount. The statement does not hold for milk that has been boiled, or pasteurized, or doped with alkalies. All of these "processes" annihilate the precious vitamins, and so deprive milk of one of its most unique and valuable properties.

Certified milk is clean milk and virile milk. Kept clean and cool from the cow to the consumer. Certified milk occupies a field of its own that cannot be displaced by any modification.

There should be an immediate cessation of at-

tempts to institute any laws or regulations that will put normal, physiologic milk beyond the reach of physicians, dieticians and the public at large. To pasteurize certified milk would be a criminal experiment at gilding the lily. Produced with scrupulous care, under the supervision of a reliable milk commission, and then subjected only to careful handling in the home, certified milk affords the ideal answer to the milk problem. That is, in so far as the feeding of infants and invalids is concerned. No other food can satisfy or furnish the same simple and blanket food value for infants and invalids as does the raw, clean natural product known as certified milk.

Because it is scientific, because it meets a want in nutrition that no other substance can supply, certified milk is an invincible product, destined sooner or later to supplant the present pasteurized product. For after all, the pasteurized product is merely a substitute for the clean, raw, whole milk. It is a bacteriostatic but not a dirt destroyer by any means. "Cleanliness is next to godliness," and where milk is concerned, it is side by side with all of the most vital requirements of health and strength and general well being. Clean milk is the benefactor of the human race. Dirty milk a mortal enemy.

Illinois State Medical Society

OFFICIAL MINUTES OF THE SEVENTY-FIFTH ANNUAL MEETING

HELD AT QUINCY, MAY 18-21, 1925

MINUTES OF THE MEETING OF THE HOUSE OF DELEGATES

The first meeting of the House of Delegates of the Illinois State Medical Society was called to order by Dr. John R. Neal, First Vice-President, at the Elks Club Auditorium, Quincy, Illinois, at 9:05 P. M., May 19, 1925. The Secretary called the roll and reported that a quorum was present.

The next order of business was the reading of the minutes of the previous meeting. On motion duly made and seconded it was voted that the minutes as printed in the July issue of the JOURNAL be accepted as the official minutes.

REPORT OF THE SECRETARY

The next order of business was the Secretary's report by Dr. H. M. Camp.

Gentlemen of the House of Delegates: Your Secre-

tary reports the collection of the following sums for the balance of the year 1924 and the first four months of 1925. The first figure read being from May 1, 1924, to December 31, and the second from January 1, 1925, to April 30, 1925.

	1924	1925
	1924	1925
Adams	\$ 350.00	350.00
Alexander	5.00	90.00
Bond		65.00
Boone		75.00
Bureau	80.00	105.00
Carroll	55.00	
Cass	80.00	75.00
Champaign	265.00	275.00
C. M. S.	7,300.00	11,140.00
Christian	175.00	85.00
Crawford	115.00	110.00
Clark	80.00	50.00
Coles-Cumberland	30.00	180.00
Clay	60.00	
Clinton	20.00	
De Kalb	135.00	155.00
De Witt		85.00
Douglas	35.00	95.00
Du Page	10.00	15.00
Edgar	20.00	95.00
Edwards		30.00
Effingham		115.00
Fayette	50.00	40.00
Ford	90.00	75.00
Franklin	165.00	120.00
Fulton	135.00	75.00
Gallatin	60.00	45.00
Green		120.00
Grundy	60.00	(With Will)
Hamilton	25.00	10.00
Hardin	20.00	
Hancock	5.00	135.00
Henry	15.00	25.00
Henderson	40.00	
Iroquois		75.00
Jackson	55.00	100.00
Jasper	40.00	
Jefferson	105.00	150.00
Jersey	35.00	
Jo Daviess		25.00
Johnson	35.00	25.00
Kane	105.00	65.00
Kankakee	280.00	225.00
Kendall		65.00
Knox	45.00	130.00
Lake	130.00	25.00
La Salle	150.00	185.00
Lawrence	25.00	45.00
Lee	155.00	25.00
Livingston	175.00	
Logan	90.00	
McDonough	105.00	125.00
McHenry	125.00	
McLean	130.00	240.00
Mason	105.00	
Macoupin	120.00	100.00
Madison	15.00	415.00
Marion	50.00	215.00
Mason	5.00	
Massac	65.00	55.00
Menard	20.00	20.00
Mercer		80.00
Monroe	5.00	25.00
Montgomery	20.00	145.00
Morgan	250.00	160.00
Moultrie	45.00	50.00
Ogle	130.00	10.00
Peoria	750.00	375.00

Perry	55.00	
Platt	45.00	15.00
Pike	75.00	45.00
Pulaski	20.00	
Randolph	15.00	85.00
Richland	5.00	65.00
Rock Island	15.00	285.00
St. Clair	555.00	
Sangamon	55.00	495.00
Schuyler	5.00	50.00
Scott	40.00	5.00
Shelby	10.00	55.00
Saline	10.00	35.00
Stark	10.00	60.00
Stephenson	225.00	205.00
Tazwell	35.00	40.00
Union	21.50	95.00
Vermillion	5.00	465.00
Wabash	60.00	
Warren	25.00	85.00
Wayne		70.00
White	10.00	
Washington	85.00	75.00
Will-Grundy	385.00	360.00
Winnebago	451.25	25.00
Whiteside	170.00	
Woodford	5.00	85.00
Williamson	25.00	135.00
Subscriptions	90.00	119.00
Exhibits	832.50	845.00
	\$16,360.25	\$23,974.00

The figures reported as May to December when added to the receipts reported to the 1924 House of Delegates, covering the first four months of 1924, make the total for the entire year of 1924:

Receipts from County Societies	\$32,800.25
Subscriptions	195.00
Exhibits	1,582.50
	<hr/>
	\$34,577.25

From May 1, 1924, to May 1, 1925, a total of 256 voucher checks were issued for \$51,636.44. These were divided as follows:

General expense	\$33,559.86
Medico-Legal	12,786.83
Legislative	5,289.75
	<hr/>
	\$51,636.44

Included in the general expense is the sum of \$16,887.06 paid for printing the JOURNAL.

Members in good standing May 6, 1924.....6,412
Members dropped—

Death	69
Non-payment and removal	329 389
	<hr/>

	6,023
New members	484
Reinstated	70
	<hr/>

Membership May 1, 1925.....6,577

An audit of the Secretary's and Treasurer's accounts for the two years ending in May, 1924, was made by Fred H. Setterdahl & Co., Public Accountants, of Rock Island, Illinois, and reported to the Council. The auditors verified the reports of the Treasurer and Secretary as reported to the House of Delegates last year showing the same to be correct.

A few weeks ago we sent a questionnaire to all of the State Societies asking the following questions:

1. Approximate membership of the society.
2. Amount of their annual dues.
3. Nature of the services rendered to their members.
4. Approximates treasury surplus at end of fiscal year.
5. Do you consider the annual dues adequate for the services rendered by the Society?
6. Are you contemplating an increase in the annual dues?
7. Does your Society maintain an educational bureau to give instruction along health lines to the laity?
8. If such a bureau is maintained, how is it financed?
9. In your opinion, would a raise in the annual dues cut down the membership of the Society?

Replies were received from 42 states.

The annual dues vary from \$3.00 to \$20.00 per year.

Two societies	\$20.00
One society	15.00
One society	12.00
One society	11.00
Eight societies	10.00
One society	8.00
Two societies	7.00
Fifteen societies	5.00
Six societies	4.00
Five societies	3.00

In looking over the replies to this question, it is very evident that the services rendered are in direct proportion to the amount of the annual dues, and many of the questionnaires received had a notation to the effect that more and better work could be done if the receipts were larger.

In reply to the query relative to the adequacy of the annual dues for the services rendered—twenty-five said the dues were adequate at this time, and seventeen said positively that they were inadequate to carry on the work of the society. Thirteen volunteered the information that the dues would probably be increased this year, and only one thought they would be reduced—in this case, from fifteen to ten dollars. Seven societies reported lay education work being done, and three said that some work along this line was being done through committees. Thirty-two said no work of this nature was done by their society.

The Law education work in Illinois through our most efficient Lay Education Committee under Miss Keller, as director, is a very important part of the work of our society. During the past fifteen months the work has been made possible through voluntary subscriptions from approximately 20 per cent of our membership. At this time, no one doubts the value and necessity of work of this kind. An increase in the dues of the society to perhaps eight dollars annually could take care of the Lay education work at a minimum cost to the membership and it is the opinion of your Secretary that this should be done at this time, and without any loss in the membership of the society.

Members of the Illinois State Medical Society, in addition to the mere membership, get—

1. Medico-Legal Protection—the best that is given by

any state organization, to the best of our knowledge and belief.

2. Legislative Protection—through a most efficient committee organization, that is on the job throughout the year.
3. Publicity—through the work of the Lay Education Committee the value of which we are just beginning to realize.
4. Eligibility to Fellowship in the American Medical Association.
5. The best State Society Journal published in the United States.

Respectfully submitted,

Harold M. Camp, Secretary.

It was moved that the report of the Secretary be adopted. Motion seconded and carried.

The next order of business was the report of the Chairman of the Council by Dr. S. J. McNeill.

REPORT OF THE CHAIRMAN OF THE COUNCIL

The Council has had a very busy year. We have had six meetings and a good deal of correspondence. There has been a little feeling regarding the date of this state meeting. A number of the members wanted the Council to change the meeting to a week earlier. If that had been a week earlier the Council would have been more than glad to make the change. At that time the request came in from down state and we had more than two thousand feet of space sold for exhibits. If the date were changed more than one-half of the exhibitors could not be present at this meeting. I feel we should have some definite understanding regarding the date of the state meetings so that it will not come the week before the meeting of the American Medical Association. The American Medical Association is meeting next week because it is the only time Atlantic City could take the meeting. It is really the fault of the American Medical Association for the two meetings coming so close together. The Council felt that to change the meeting at so late a date would entail considerable loss to the Society from the exhibits. We are going to have twice as many exhibits this year as ever before.

At our December meeting we were asked by the American Exposition Palace to come in with them on the National Baby Show and Health Week. There was a committee of five appointed of which I was one of the members. We accepted the proposition. At first it looked to the Committee as though we would have nothing to do, but we later found out that this was not the case. Dr. Ferguson, Dr. Drake and Dr. Whalen worked very hard. We had a good many disappointments, but finally the show was a great success. There were 13,500 children exhibited. There was a good attendance. Some people mentioned to me that they never knew anything about the State Medical Society until they came to the show. It seems to me it takes something like this to let the people know what the State Society is doing. We questioned at first the advisability of going into it,

but the American Exposition Palace told us the people wanted such a show. I am very glad to say it was a success in every sense of the word. We had wonderful help from the first. We had something like 164 doctors and 60 nurses. I do not believe I ever saw a show that was better run.

I am not going to talk about Lay education because that will be taken up later. We are beginning to realize the benefits of a Lay Educational Committee. They have been working hard and have been very careful about the money. It has been used judiciously and none of it has been wasted. It takes a mint of money to run a campaign like this and we need more. I think Dr. Camp said that twenty per cent of the members contributed. I would say from what I have seen as Chairman of the Council that I do not believe there is a State Society in the Union that gives its members as much for their ten dollars as the Illinois State does. In some of the states they charge fifteen dollars with no medical protection.

I am very sorry that the book on medical history is not completed. You know it takes time to write up a medical history when you consider that just a year ago we voted to have this book printed and when you consider that it took seven years to have the medical history of Massachusetts Medical Society printed, I think we have done very well. Our book should be completed in a few months and I hope when it is every member of the Illinois State Society will buy a copy.

Dr. Mather Pfeifferberger, Alton, moved that the report be accepted. Motion seconded and carried.

The next order of business was the report of the Treasurer by Dr. A. J. Markley.

REPORT OF THE TREASURER

This report is for period of May 5, 1924, to May 16, 1925:

RECEIPTS

	General Fund	History Fund	Medico-Legal	Legislative
Balance May 5, 1924.	\$15,999.33		\$ 6,621.91	\$11,998.48
Rec. from secretary.	21,111.38		11,533.32	7,689.55
Rec. from journal.	14,000.00			
Rec. from legislative fund	4,000.00		3,000.00	
Transferred from general fund		\$1,000.00		
	\$55,110.71	\$1,000.00	\$21,155.23	\$19,688.03

DISBURSEMENTS

Vouchers cashed	\$ 31,765.76	688.72	12,911.83	6,820.80
	\$23,344.95	\$ 311.28	\$ 8,243.40	\$12,867.23
Transferred to history fund	1,000.00			
Transferred to general and medico-legal funds				7,000.00
Balance on hand.	\$22,344.95	\$ 311.28	\$ 8,243.40	\$ 5,867.23

I hereby certify that the balance to the credit of the Illinois State Medical Society, Dr. A. J. Markley, Treasurer, at the close of business May 16, 1925, is

thirty-six thousand seven hundred sixty-six dollars and eighty-six cents (\$36,766.86).

E. Charles Harvey, Assistant Cashier.

This report was referred to the Auditing Committee.

The next order of business was the report of the Councilors.

COUNCILOR REPORTS

1. Dr. D. B. Penniman, Rockford, reported for the first district as follows:

We are doing well. One or two of the County Societies have fallen back, but the majority are going ahead. I would like to state that the welfare of the County Society depends on the Secretary. The Councilors are of little help. If you have a good Secretary re-elect him. It does not make any difference if he serves for twenty-five years—if he is good, keep him.

2. Dr. E. E. Perisho, Streator, reported for the second district as follows:

The Second District represents the ten following counties: Whiteside, Lee, Bureau, La Salle, Kendall, Grundy, Livingston, Woodford, Marshall and Putnam. During the past year I have visited most of the counties, and have also done a great deal of detail work, by personal interviews with various members of these counties, and have written a great many letters, especially to the weaker counties.

There are four counties in the Second District that are not very strong because of their size and location. Kendall County has no town of any size, and with about ten physicians throughout the entire county. Six of these physicians have tried to keep up an organization but of course cannot carry on any very active work. Grundy is about the same sized county and the same conditions prevail. Marshall and Putnam counties likewise have no towns of any size and with a small number of doctors in the two counties. For a few years they tried to keep up a society comprising the two counties, but it was very difficult to get attendance, then various members asked to join Peoria and La Salle County Societies so that they could keep up their membership and belong to a society that would have programs worthy of attending, so most of the physicians of these two counties belong to either the Peoria or La Salle County Societies.

The remaining six counties are well organized and doing good work. Some of them hold monthly meetings and others semi-annual meetings. La Salle County, with the cities of Streator, Ottawa, La Salle, Peru, Oglesby and Mendota, as well as several smaller towns, have the largest number of physicians of any other county in the district. There are about 100 physicians in the county and practically every man who is doing active work is a member of the County Society. They hold two regular meetings a year, and in addition to that they have Inter-City Clinics which are held about once a month during the summer months. Also the cities of Streator, Ottawa, La Salle-

Peru, Oglesby and Mendota have their city physicians' clubs.

The entire district is very well organized as to medical politics, and most of the Senators and Representatives of the district have been with us on legislative bills.

I have done a great deal of personal work in the behalf of the Lay Educational Campaign, and three of my counties have voted a ten dollar assessment on their members for the Campaign, and I feel sure the other counties will do likewise.

3. Dr. S. J. McNeill, Chicago, reported for the Third District as follows:

The Third District includes Kankakee, Will-Grundy, Lake, Du Page and Cook counties. Kankakee has forty-six members and they have been doing very good work. Will-Grundy County was merged in March, as Grundy had only eleven members and they were going to the Will County Society meetings, so we thought it was better to merge the two societies. They meet every Wednesday at luncheon and always have a good paper and sometimes an out-of-town man. The attendance is excellent. I do not know a county society that is more alive than this one to what is going on in Springfield. They have a senator there who is afraid of them.

Lake County has forty-four members. One member died and was dropped for non-payment of dues during the year. This county society needs a little stimulation. I attended their September meeting and they had a very good program. They pay more attention to the program than to the Society. They forget that other things must be taken care of besides the scientific.

Du Page has a membership of thirty-five live men. Their meetings are excellent and their attendance is one hundred per cent. If a member is absent he has to have a good reason for being away.

Cook County, the Chicago Medical Society, has a membership of 3,568. We reported forty-four deaths, about twice as many as last year. Some of our very prominent men in Chicago passed away very suddenly. I will not go into details about the Chicago Medical Society. We have branch societies which meet once a month and the main society meets every Wednesday evening. It is the largest county medical society in the world.

I am going to repeat a little of what I said about the dues. The Chicago Medical Society which is included in the ten dollars dues has a Doctor's Bureau in connection which is worth one hundred dollars a year to a man alone. It is the one thing that does not cost the members of the Chicago Medical Society one cent but is included in the ten dollars dues.

4. Dr. William D. Chapman, Silvis, reported for the Fourth District as follows:

Having filled an unexpired term as Councilor for the Fourth District I beg to report that our societies are just as good as any; they are no better than the other eight districts but fully as good. We have some societies that are better. There are some things the Secretary cannot overcome. He cannot overcome

the impassability of some of the roads. This prevents meetings at certain times of the year. One of our county societies quite recently staged a meeting with an attendance approximately of about 100 men. Those men came from a radius of fifty miles from all the Districts of a county society which a few years ago was distinctly limited. It was due to the action of the Secretary and of course also to the improved methods of traveling.

One thing which I wish to mention at this time which has come to my notice has to do with our relation to the public. A doctor in a municipal hospital in the District had been told by a justice of peace to deliver to a patient an x-ray negative. This occurred quite recently and all that has been done is to mark time. Our attitude has been that x-ray plates were part of the case history or part of the hospital record. Now we are confronted by a situation in which a justice of peace issues an order that an x-ray plate be delivered to the patient because it is his property. I wish that the gentlemen present might make note of this and if there is a precedence they would inform us.

5. Dr. C. S. Nelson, Springfield, reported on the Fifth District as follows:

This District is in normal condition. It has not made great progress forward, neither has it gone backward. I believe it will compare favorably with the other districts; in fact, there is not much room for improvement in the Fifth District because the number of eligible men who do not belong to their respective county societies is very small. As Dr. Chapman said the roads are impassable at certain times of the year and it is difficult to get good attendance. I agree with Dr. Chapman regarding the merger of different county societies. If a county society does not have more than a half dozen physicians in it, if the proper spirit and proper attitude is there they can organize a Society and will make their influence felt. If they merge with the larger societies they lose their identity. It is not the number in the society that regulates their influence; it is the spirit of the society. If there are not more than a half dozen physicians in a county society they should maintain their county society. They can make their influence felt even with such a small number.

6. Dr. H. P. Beirne, Quincy, reported for the Sixth District as follows:

The Sixth District has about six county societies which hold regular meetings and put on unusually good programs. I want to agree with what Dr. Peniman said about the change in Secretaries. I think the secretary is eighty-five per cent of a successful society. I noticed especially in Madison County where Fiegenbaum is located that he has so interested the men that they take a half day for the meeting. One thing has that has not been brought out tonight is the advantage of post graduate work in the county societies. I heard a paper in Madison County on infant diseases that I think any man would consider worth while. I want to call your attention to the advantage of building up programs from post graduate standpoints on one particular subject. If you do that you

will find that at the end of the year you will have accumulated considerable knowledge. We have in our district a few counties that are so small that they are not organized as far as having regular meetings, but I want to say when it came to counting votes on the Chiropractic Bill they were one hundred per cent with the Medical Society.

7. Dr. L. O. Frech, Decatur, reported for the Seventh District as follows:

The condition of the Seventh District is about the same as last year. From a medico-legal standpoint we have a very large percentage of malpractice suits. From the standpoint of cooperation of the societies I wish to state that it has been better than it was last year and much better than previously. The Secretaries seem to be cooperating in every way and doing good work. The greatest complaint that I get from the societies in my district is from the standpoint of attendance. Some of the smaller societies cannot seem to get enough men out to make an interesting meeting. We have three really good societies, three really poor and the other six are fairly good. These men complain that they cannot ask a man of ability to come and talk because they cannot get enough members to attend the meeting. I have asked some of the members how it would suit them if some sort of a post graduate course could be arranged for their society whereby they would not be expected to get out a good many members, especially if the Illinois State Medical Society could send out a few good men to give lectures. It seems to have taken well. That is one of the recommendations I would make for some of these smaller societies, to try post graduate work.

8. Dr. G. B. Dudley, Charleston, reported for the Eighth District as follows:

There are eight societies in this district representing nine counties with two counties not reporting. There are 391 licensed physicians in the nine counties, 294 of which are paid-up members; percentage, 75 per cent. Here the members' gain has been slightly in excess to the ones lost, 21 to 19. The number of meetings held range from two to twelve. Champaign County has held three pretentious clinical meetings and royally entertained the President of the American Medical Association as well as surrounding counties. The two counties not reporting have poor interest in societies, but they are controlling the votes of the legislators. One county has eleven members and one has twelve, but in the work of the Legislative Committee they have given whole hearted support. The Director of Lay Education has visited seven of these counties.

9. Dr. Andy Hall, Mt. Vernon, reported for the Ninth District as follows:

The Ninth District is composed of twenty-four counties in the southern end of the state. Some of them have but few physicians. One county has only five active physicians. Some of those counties do not have any meetings but they keep up their organization or have a very few meetings. In the city in which I live every physician is a member of the society.

We have had a meeting each month and the attendance has been more than 125 per cent; in other words, We have had a larger attendance at our meetings than we have membership. I have thought that some of the smaller counties might combine with other counties and have their meetings because some of them are so small that they cannot get enough members to attend. I believe that my district should be divided so as to make another district. It is not possible for one council to get around and visit twenty-four counties in a year. It would take two or three days to get to some of these places and back home. I think in general the district is in pretty good shape and the physicians are cooperating with the State Society.

It was moved by Dr. Mather Pfeifferberger, Alton, that the reports of the Council be accepted. Motion seconded and carried.

The next order of business was the report of the Editor, Dr. Charles J. Whalen, Chicago.

REPORT OF THE EDITOR

Towards its first century of progressive achievements, this diamond jubilee celebration brings the Illinois State Medical Society to the three-quarter mark. The ILLINOIS MEDICAL JOURNAL now opening its twenty-seventh year offers congratulation to its parent and sponsor. Proof of the sincerity of these felicitations may be found in the anniversary gifts that the JOURNAL offers to the parent society. These presents are both abstract and concrete.

Of these tributes, that in the abstract, lies in the persistent and prophetic fight that the ILLINOIS MEDICAL JOURNAL and its editor have made against the menaces affecting the medical profession and the general public, both for the protection of the profession and the conservation of our national democracy.

Observing this tendency as applied to economics generally, and directed primarily at the practice of medicine, as an element of least resistance, the ILLINOIS MEDICAL JOURNAL and its editor began a battle against the socialization of medicine, compulsory health insurance, and over-centralization of power. It is more than gratifying to note that after this journal has been engaged in this crusade for years, that now great men the country over are aroused to the danger of over-centralization, and are fighting the encroachment of a stifling bureaucracy, that made its first entrance to this country through attempts to debase the practice of medicine. One of the most vicious of these attempts is illustrated in various misleading legislation, seemingly planned as welfare work for women, children, and maternity.

It is more than gratifying to the editor of the ILLINOIS MEDICAL JOURNAL to know that the policy of the periodical has been thus foresighted and virile. To be successful every publication must have a definite policy, and to have fought such menaces to the future welfare of the country as this periodical has fought and is fighting finds fresh justification every hour. It is reassuring to the editor to find that his

estimate of the situation, made a dozen or more years ago, was correct, for in this confirmation of prophecy lies inspiration as well as realization that the crusade must continue. Compulsory Health Insurance, the General Socialization of Medicine, the Sheppard-Towner Act, the Child Labor Amendment, and a dozen other wolves in sheep's clothing were taken at their proper valuation by the editor and put in their true colors through the columns of the ILLINOIS MEDICAL JOURNAL.

In the pleas for the adequate pay, for a return to civic prominence of the medical profession, and for the rights of the old fashioned doctor, albeit with due respect for skilled and talented specialists, the policy of the JOURNAL has been consistent. It has insisted upon riddance from lay dictation that is so hampering to the profession and to the welfare of the people, and it is absolutely against the practice of medicine by corporations, under any guise.

The trilete in the concrete is briefer. Nor must it be misconstrued therefrom that the ILLINOIS MEDICAL JOURNAL is making friends with the Mammon of iniquity. The ILLINOIS MEDICAL JOURNAL during the past year has sustained its unparalleled record for business prosperity. All through the war and the consequent commercial slump, this periodical has held its own in the matter of advertising contracts even in the face of retrenchments and cancellations from hundreds of thousands of concerns with hundreds of thousands of periodicals all over the world. Last year returns showed a gain, but this year all records are broken.

For during the year just ended the income from advertising in the ILLINOIS MEDICAL JOURNAL has been larger than during any previous similar period in the history of the magazine. Let it be repeated this high record has been attained at a time when general retrenchment was in progress to an alarming extent and was giving concern to publishers everywhere. That the ILLINOIS MEDICAL JOURNAL can show this proud record is due to the faithful work of the advertising solicitors employed as well as to the fact that the ILLINOIS MEDICAL JOURNAL is widely read and is known to advertisers as a magazine with a definite progressive editorial policy, which is flanked by contributions of scientific merit as well as of genuine interest to active, working practical medical men and women, and to many members of crafts and profession correlating with the practice of medicine.

Stated in round numbers, since definite figures are always emphatic, the actual increase in advertising income during this last year of the ILLINOIS MEDICAL JOURNAL amounts to about \$2,000. Prospects at present augur that there will be a steady gain throughout the coming year.

Postal rates as increased, under the new law, will be a problem of the new year. Protest against the increase is long and loud from every quarter. The law will put its teeth deeply into the circulation of scientific and education periodicals.

The editor understands that it is impossible for him to voice unfailingly the exact ideas of every

fellow-professional. But where there is a difference, there is always discussion, and discussion and debate are the revitalization of every science. Constructive criticism builds the world.

Although rebellion has begun against "gallows statutes," hindering laws that literally hang the people and the professions by the neck—there are enough firmly fixed ward healers and politicians seated in legislative bodies, and backed by the wealth of parlor socialists and job-fixers, to make the sleepless eye grow weary with watching the tricks of the legislators. Cult bills in plenty with charlatan cash to back them are even now in progress of preparation for next year's lawgivers. These must be cared for, or the public welfare will suffer.

Looking to the future, weighing the past in the balance and considering closely the present is the inherent duty of men and corporations upon anniversary days. Keeping this covenant with tradition the editor of the ILLINOIS MEDICAL JOURNAL wishes to urge a few responsibilities that should be undertaken by members of the profession during the coming twelve months, as well as promulgated through the columns of the JOURNAL.

1. Renewed endeavor must be made to complete effective organization of the profession so that physicians as a class will produce ballot box effectiveness, and the request of a doctor be as much in the opinion of the lawmakers as the ideas of an alien-born anarchist, even though he or she be masked as a "progressive citizen."

2. Physicians should make sacrifices to enter more actively into the executive life of the body politic by reverting to the habits of pioneer doctors and acting as rulers as well as healers in the community. Doctors can make just as good senators, mayors, governors, or even president as they did a hundred years ago, and more medical men should stand in the ranks of the executives of this democracy. Statesmanship and diplomacy are not excluded from the practice of medicine, as every doctor knows. *Why not have a doctor in the White House?*

3. The mastery of events and men that is one of the birthrights of the medical profession should no longer be bartered for the pottage of a scientific semi-exclusiveness that is resulting in a slowly rising barrier between the hearts of the people and the family physician. Disregard of this condition leaves the gate open for the encroachment of cults and isms.

4. Assumption by district and county societies of the control, or at least joint direction of public health work, clinics and hospitals, in so far as medicine or medical treatment is concerned. Advocacy of such economic and community effort has been recommended by the Editor continuously in the columns of the JOURNAL as well as in his previous annual reports.

5. To cause your individual society to enhance the type of medical service in your community.

6. To foster and inspire and institute with the aid of selected members and the Lay Education Committee an increasing dissemination of information for the education of the public. The lay education campaign

is one of the many other advantageous innovations recommended by the JOURNAL.

7. To bring about better scientific programmes for all meetings of medical men.

For these aims and ideals the ILLINOIS MEDICAL JOURNAL has fought consistently. At the risk of tiresome repetition there has been continuous counsel through the editorial columns of the JOURNAL of these necessary projects.

Crusades against lay dictation of the practice of medicine, the appeal for organization and the best interests of the profession and those it serves are candidly conducted and with all fairness in the mouthpiece of the State Society.

While the ILLINOIS MEDICAL JOURNAL is the largest organ of its kind in the country, yet its influence could be trebled with increased circulation. Boosting the mouthpiece of the Society is not a bad idea for members of the profession. Such action is one item more in the banding together of the confraternity that must become closer and closer to meet the complexities of modern civilization if the profession is to stand. Professions and men who rise by science can fall by science, too, unless commingled with details of humanity. The profession can not live isolated and alone, either from its own members or from lay people.

The JOURNAL continues to emphasize its recommendation that steps should be taken to remedy that ill-considered legislation that has prostituted the protective function that statutes should exercise upon civic welfare and the sanctity of science, and that it should be insisted upon by the medical profession that:

1. All persons attempting to diagnose and to treat human ailments shall stand equal before the law.

2. All persons attempting to diagnose and to treat human ailments shall submit to the same license requirements upon the point of the fundamental or preliminary educational standard.

3. All persons seeking a license to diagnose and to treat human ailments shall be passed upon by the same board and by only one board, as to the fundamental and professional qualifications of such proposed licensees.

4. The state law shall so provide that all persons engaging in the practice of medicine under any name whatsoever shall be denied a license until these principles have been complied with.

5. Socialization of medicine must be battled and before the fate of the profession of medicine in Germany and in Russia has become our own, both to the destruction of science and the welfare of the people.

6. The medical profession must put its finger on the pulse of politics and keep it there. Fluid contact must be established with members of the legislature and with the men who make politics.

This accomplishment is possible only when each Society works as a unit and each member of every Society as well as the profession realizes that unless medicine takes politics by the throat, politics that already is on the throat of medicine, will choke the mother science.

But enough of staring facts in the face. The year is before us, and with this defensive knowledge at the finger's ends, and assurance that its further diffusion will persist to a triumphant end, in the columns of the ILLINOIS MEDICAL JOURNAL, let a glance be taken backward at some of the fortuitous events chronicled since the inception of the periodical.

The Illinois State Medical Society in its seventy-five years of existence has seen the population of the city of Chicago increase from 29,693 in 1850 to about 3,200,000 today, and the population of the state of Illinois from 851,470 to about 7,000,000.

Chloroform and ether were still strange new aids to medical and surgical science in 1850. The infectiousness of puerperal fever had only recently been announced by Dr. Oliver Wendell Holmes. In 1850 Devanne discovered the organism of anthrax and a year later Helmholtz invented the ophthalmoscope.

Chicago, one of the centers of applied sanitation of the world, was having even so early as 1854 regular publication of reports on health with Dr. Nathan S. Davis sending them out, and in 1855, E. S. Cheesbrough, an engineer, advised flushing the Chicago river with water from Lake Michigan for purification purposes. In 1854, too, Dr. Daniel Brainard advocated infiltration of solutions of iodine in treatment of poisoned wounds. About that time discovery was made of trichinae and quarantine placards were first made use of in Chicago. The laryngoscope was invented in 1858 by Czermak and in 1859 the Chicago Medical College started. This was the first medical school in America to require a graded course of instruction. In 1867 Dr. John H. Rauch was appointed sanitary superintendent of Chicago and the first link was strung in the present involved sanitary system. The first tunnel, two miles long, was completed for the supply of lake water for drinking purposes. Chicago had its first milk inspection in 1869, and a year later its first milk ordinance. That same year Simon demonstrated the possibility of removing a kidney. In 1871, the American Public Health Association was formed with Dr. John H. Rauch acting as treasurer; followed in rapid succession the establishment in 1876 of the Department of Health of Chicago, and in 1877 of the Illinois State Board of Health. Also in 1877 was made the third attempt to regulate the practice of medicine in the state by the requirement of a license for practice. Of the two previous attempts, that made in 1819 was repealed in 1821 and the act of 1825 was repealed before it became effective.

The infective agent in puerperal fever, the gonococcus, the parathyroid glands, Eberth's bacillus as the cause of typhoid fever, bacillus of tuberculosis, tetanus, diphtheria, glanders, syphilis and rabies have all been discovered during the last seventy-five years, and also anti-toxins for many diseases, and specifics for others. Since the ILLINOIS MEDICAL JOURNAL has been in existence the responsibility of rats as disseminators of the bubonic plague through fleas, of mosquitoes for that of yellow fever and of the virulency of the tsetse fly have all been discovered. The Chicago Drainage Canal was opened in 1900, and the

Illinois State Medical Society incorporated to "promote science and art of medicine." Country dairy inspection was inaugurated in 1903-4 at Chicago, and in 1906 was begun the first systematic bacterial inspection of Chicago milk. The state of Illinois assumed distribution of diphtheria antitoxin in 1909 and in 1912 was begun the chlorination of the Chicago water supply.

The State Board of Health of Illinois was abolished in 1917 and the state department of registration and education created and given jurisdiction over the practice of medicine and allied sciences.

During the last third of the existence of the Illinois State Medical Society the problems of preventive medicine have been the featured ideal of the members. One example of fundamental prophylaxis found excellent illustration in the first annual national health exposition sponsored by the Illinois State Medical Society and held in Chicago this spring. This was also an idea of the ILLINOIS MEDICAL JOURNAL and is reported on fully elsewhere during this convention by the Chairman of the committee, Dr. Ferguson, in charge.

Another vital point of discussion for the immediate future rests in the need for shortening the time and expense of preparatory medical training without diminishing the efficiency of the student.

One of the most disturbing factors among the profession is realization that medical men of today are turned out to practice far too late in life and with far too much money having been spent in the preliminaries. This does not apply to specialists but to the great bulk of practitioners. It is a subject that must be investigated and elucidated.

In conclusion, then, let it be stated that one of the additional ideals for which the ILLINOIS MEDICAL JOURNAL is prepared to fight during the coming year, is reform in current medical education. The A. M. A.'s President has already taken this situation to heart and the council chamber. In addition to the foreshortening of the preparatory years there is recommended a general shift especially in state institutions of the method of part time instructors. The entire current medical education systems need at present a thorough stock taking and consideration.

With all due thanks to those whose loyal support and kindly friendship have helped make so pleasant the task of editing the JOURNAL, the editor wishes again to congratulate the Illinois State Medical Society and its executives upon the attainment of the diamond jubilee.

It was moved by Dr. Mather Pfeifferberger of Alton that the Editor's report be accepted. Motion seconded and carried.

Dr. C. E. Humiston, Chicago: I would like to ask consent to interrupt the regular order of business. I move the suspension of the rules in order to get off a message to Springfield.

Motion seconded and carried.

Dr. C. E. Humiston, Chicago: I wish to offer the following resolution:

WHEREAS, The Illinois medical practice act now in force makes provision for the licensing of drugless healers on a showing of educational qualifications far below what is demanded of those who seek licenses to practice medicine in all its branches, and,

WHEREAS, The limited licenses of drugless healers restrict such healers only as to the method of treatment which they may employ, but in no way place any limitation upon the character of the ailments which said healers may undertake to treat, thus giving legal sanction to the withholding of the only known successful treatment for certain conditions of disease, and,

WHEREAS, Certain cults are now asking the legislature for an extension of the special privileges which they already enjoy, therefore,

Be It Resolved, That the Illinois State Medical Society urge upon the legislature the necessity of maintaining high educational standards among those who assume responsibility for the health and lives of the citizens of this commonwealth; and

Be It Further Resolved, That copies of this resolution be sent to the Governor of Illinois, the President of the Senate and the Speaker of the House.

I move the adoption of this resolution.

Motion seconded and carried.

The next order of business was the report of the Committee on Medical Legislation.

REPORT OF COMMITTEE ON MEDICAL LEGISLATION

Dr. J. R. Neal, Springfield, made the following report:

Your committee on legislation begs leave to make the following report:

With the permission of the Council the State was redistricted in 1924 to conform with the Senatorial boundaries, for legislative purposes only, the old Councilor Districts remaining the same. This has worked fairly satisfactorily and with much less confusion than was encountered formerly.

Your Committee began this work immediately after the election of the Legislature men in 1924, and through the excellent cooperation of all the Councilors a legislative committee in each district in which a member of the General Assembly resided was formed, composed of the family physician and several other influential physicians. With but few exceptions this contact with the Legislature has had good results.

A letter was directed to each candidate before the election calling attention to the probability of him having to decide bills relative to the Public Health, in the event of his being elected. This brought an excellent return of answers—approximately one hundred replies from candidates, of which forty-six were elected. A majority of these forty-six, during the pending chiropractic controversy, have said that they were pledged to uphold the laws regarding the treatment of disease.

The mailing list of approximately six hundred physicians is composed of district committeemen selected by the Councilors, as well as other prominent physicians who are interested in medical politics; besides medical legislative committeemen, in thirty-three states, who reciprocate information with us.

A bulletin is issued as frequently as necessary during the session of the Legislature. Many letters are written to each member of the Legislature over the signature of the Committee Chairman.

Personal contact is maintained in Springfield with many members of the Assembly, especially the older and more influential ones. Rarely is an effort made by your Committee to ascertain the attitude of a Representative or Senator on any measure, unless the proper opportunity is afforded. We believe that this work should be done at weekends by the local Medical Committee, and the lawmaker much desires to be questioned by voters in his own town for obvious reasons.

It is an outstanding fact in our records that when a district is not awake to the issue and the local physicians do not take time to enlighten the Legislatureman the opponents invariably influence him, and frequently the Representative or Senator will be so offended by the apathy of physicians that his assumed position is difficult to change, even if he is rated as friendly to the medical profession.

The situation at the present time is satisfactory in the Legislature for out of about fifteen pernicious bills intended to lower medical education we have succeeded in holding all in committees or killing them outright with the exception of the two chiropractic measures.

Probably it is a good thing for a bill to occasionally get away from us so we may test our strength in the Legislature.

Many members of the medical profession disclaim that it is our duty to engage in political battles with the cultists, but unless we influence the Legislaturemen, who are nearly all laymen, there being only two physicians in the 54th General Assembly, an error may be made in adopting laws to liberalize the educational standing of all who seek to practice medicine, and it is not difficult to visualize the future when the drugless healer will occupy the positions in the various state institutions which are now supervised by medical men. It is not the competitive element in the situation that alarms us, but the sick of the state.

A Christian Science Commissioner of Public Health in Illinois; a Chiropractor Superintendent of one of

our large Hospitals, and a Napropathic head in some of the State Institutions may sound ludicrous, but unless the medical fraternity continues to educate the lawmaker, graver errors may inadvertently be made.

It certainly behooves us to "carry on" against the avalanche of measures supported by the cultist and faddist.

Your Committee is indebted for the fine cooperation of the officers and councilors of the society and also for the excellent work of the local legislative committeemen. Especially do we wish to commend the work of the Cook County organization, including the fine support of Miss Keller of the Lay Publicity Committee.

CHARLES E. HUMISTON.
EDWARD BOWE.
J. R. NEAL.

Dr. E. P. Sloan, Bloomington, moved that the report be accepted. Motion seconded and carried.

REPORT OF COMMITTEE ON LAY EDUCATION

The next order of business was the report of the Lay Education Committee.

Miss B. C. Keller, Director, gave the following report:

You have heard a good deal tonight about organizing the medical profession, about socialistic medicine and it is my job to tell you how this committee in a year's work has tried to fight fire with fire. I am able to tell you at the end of a year of laboratory experiment, nothing more, nothing less, that the medical organization can be made into a most effective organization. I am able to tell you that the commercial aspect of medicine can be developed and your battles can be fought for you by the very people who are now blockades in the pathway. I am not going into any details. This report is as much an intentional deliberate malignant omission as it is an honest commission.

There are four things that have been fundamental to this campaign, four things we have tried to teach. The first is the teaching the lay people what a single standard of medical education means; second, preventive medicine and most of you will agree that the greatest single step toward preventive medicine is periodic health examination; third, holding back every movement, every organization, every tendency that will put the practice of medicine on a wholesale basis and remove it from personal and individual basis; fourth, team work with the community, making them believe that public health is your responsibility but their job. We have tried to work these things out. Three hundred eleven talks have been made by medical men and women; 127 moving picture films have been shown on health subjects. The speakers devoted their time, their expenses being paid by our Lay Education fund. One hundred fourteen exhibits have been organized and shown before schools, clubs and various public demonstration. Sixty-six campaigns

have been organized on periodical health examination; 308 newspapers have been used in the same way for medical articles. Six conferences have been held throughout the state. A health pageant was held under the direction of the Jackson Park Branch. We have been able to arrange health education programs with the Illinois Federation of Women's Clubs, the Illinois Tuberculosis Association, the Home Bureau of the Y. M. C. A. and the Y. W. C. A. The Illinois Dental Society voted last week at Peoria to cooperate with you as fully as you need in a dental health program. The Illinois Teachers Association are willing to teach what you have for them to teach. The twenty-eight proprietary food industries have asked for the privilege of joining you in this health work. These are headed by the American Institute of Baking, the National Dairy Company, the National Association of Meat Packers. They are willing to join you because they believe that it is mighty good business. These things have but one end, to force upon the men and women of Illinois advice for their own protection which, as Dr. Pusey pointed out to-night, should not be borne by the medical profession.

I want to call your attention to the fact that fifty counties in Illinois have not been touched. There are 500 papers that have not had a line. I want to call your attention to the fact that as a result of the first year's work the following things have been accomplished: You have not had the Sheppard-Towner Act before your legislature this year and you will not have it. Such advanced steps for the education of mothers and children have been taken in Illinois that Illinois will spring out of the twentieth place and this bill will be unnecessary.

Last year I talked to you after six weeks' experiment. I told you there were people who were willing to listen to you if you had anything to tell them. I want to tell you that these same people who were willing to listen are now willing to work with you.

I believe the people are sold on periodic health examination for the adult. Not only that, but they are in favor of the examination of every school child in the county.

We have been able to be of some service to your various committees in the Council. There are 50 counties that have been reached and 15 branches of the Chicago Medical Society. Two hundred and ninety medical meetings have been attended by your committee and 995 physicians have been personally interviewed and card indexed.

This is not the place to discuss the details of new business. I should like to suggest that if you care to go forward, and I hope you will consider very carefully whether or not you do care to go forward, that you will carry the work which this year has been chiefly among adults, through to the impressionable minds of the school child and the adolescent, and getting a hold on the boys and girls who will be the leaders of tomorrow. I believe your only constructive service will come through that channel. The second possibility as we see it is that of supplying to the county society one of its vital needs, that of more

complete postgraduate service than is at present available. Every medical school in Illinois we have been assured will cooperate. A half-dozen county societies have already asked for such courses. Another possibility is that of tying up the work we have done with the doctors, with the laity, with the conferences, expositions and speakers' bureaus with the official educational work because you and I are mighty like youngsters in school—we listen to a thing until it bores us and then we divert our minds into some other channel; we read the headlines in the newspaper and if they appeal to us we read the article. I would suggest, gentlemen, that you could tie up the things you have done by putting more emphasis on the official education of next year and the year after. One of the things that I believe can be made most profitable is the coordinating all the health activities in Illinois. You have your bureau, you could use your teachers, the people whose job it is to serve and to educate. You can have them do the work which you direct, control and supervise. It will mean that you will have a coordinated organization and an economic method that will cover Illinois. There are practical details to be worked out about this.

Let me tell you this, that no program of lay education is going to receive the real big enthusiastic support of earnest lay people unless you can make them believe that the biggest thing for which it is designed is to teach them to protect themselves.

I want to thank you for having given me the best committee of men in the Medical Society to work with. I think that committee should be much larger and much more downstate. I should like to recommend that we believe it would be better to split up the many and various phases of this work which are too big for any single or any small group of men to handle. It varies from health education in public schools to periodic health examination. I have tried in every step not to overlap, not to build an organization on an organization but to use those things that come to hand. I have tried to cooperate with the Gorgas Memorial, with the State Department of Health, and with the American Medical Association. I believe that this has been of some service to the end that it has brought certain groups together. The failures we have had have in no sense been due to lack of cooperation. If the service has not been satisfactory it is because your Director has in some way slipped, not because you have not come forward and helped.

Dr. Mather Pfeifferberger, Alton, moved that the report be accepted. Motion seconded and carried.

The next order of business was the report of the Medico-Legal Committee. Dr. C. B. King, Chicago, Chairman, made the following report:

REPORT OF MEDICO-LEGAL COMMITTEE

In the year since May 1, 1924, 39 malpractice suits have been begun, of which 27 are in Cook County

and 12 in the remainder of the State, and during the same time 38 suits were disposed of, 23 in Cook County and 15 in the balance of the State. In the same period 55 new claims for malpractice were reported by members of the Society, divided 35 from Chicago and 20 from downstate. On the 1st of May, 1924, 94 suits were pending and on May 1 this year there are 95 pending.

The number of suits begun and disposed of is about the average number recorded during each year of the past five or six years.

A suit in which many members of the Society have taken great interest has just been finally disposed of; that was the suit against Dr. Boynton of Vermont and Dr. Duntley and Dr. Knappenberger of Macomb. The trial of this case was had in Fulton County and resulted in a verdict for the plaintiff in the amount of \$18,000. We carried the case to the Appellate Court where it was reversed with a finding of facts vindicating the doctors, and judgment was entered for them in that Court. The time has now expired for the plaintiff's attorneys to file a petition in the Supreme Court, so this case is now finally disposed of in favor of the doctors. There is still a suit pending by the plaintiff's father for his expense and the loss of services of his daughter, but in view of the outcome of the main case, that one will probably never go to trial.

Another case that has been drawn out, and on which we are finally unsuccessful is that of Lawson vs. Bigler, which was tried in the City Court of Mattoon. The patient had a fractured femur, a few inches above the knee, and the doctor diagnosed it as a dislocation. Plaintiff claims there was a fracture at that time. There were rumors that this patient slipped while walking on crutches and that the fracture occurred at that time. The man's knee had been ankylosed for about twenty years, and the jury took that into consideration in bringing in their verdict. The doctor who later treated the man did a wiring operation, had an infection and the leg was amputated. The verdict was in the amount of \$4,000. We carried the case to the Appellate Court where the judgment was affirmed, and the Supreme Court has just denied our petition for certiorari, so we are all finished and the doctor will have to pay the judgment, as he has no insurance. This is the first case which we have lost since any of the present members have been on the Medico-Legal Committee. Everything was done that could possibly be done for the doctor, and we think he is satisfied with the defense that was furnished him. It cost us \$3,000.

The suits brought during the past year have been of average character, except there are fewer fracture cases and more x-ray burns than usual.

We have made a computation of the expense paid since January 1, 1921, on suits that have been disposed of. The total is \$35,540.66 on 150 lawsuits. Of these 57 were disposed of by trial on which the expense was \$26,497.36, an average of \$464.86 per suit. This includes attorneys' fees of the general counsel and local attorneys, court costs, court report-

ers, witness fees, transcripts, printing briefs and abstract and other Appellate Court expense on cases which were appealed. Ninety-three suits were disposed of not by trial, but won on pleadings or dismissed or settled on which the expenses was \$9,043.30, an average of \$97.24 per suit. Of the 57 cases disposed of by trial, we have had three expensive cases which have taken nearly one-third of that expense. They are respectively, the Fulton County case, \$1,857.16; Lawson vs. Bigler, \$3,088.98, and Glendinning vs. Neymann, \$2,095.33, a total of \$10,041.47. The average cost of these cases was \$3,347.17; the average cost of the other 54 suits disposed of by trial was \$304.74.

The Committee has had help from a number of members of the council on different claims and suits, for which we express our thanks.

Respectfully submitted,

MEDICO-LEGAL COMMITTEE,
C. B. KING.

Dr. E. P. Sloan, Bloomington, moved the adoption of the report. Motion seconded and carried.

The next order of business was the report of the Committee on Public Policy. In the absence of Dr. Emmet Keating, the Chairman, the following report was read by Dr. F. F. Hoffman:

REPORT OF COMMITTEE ON PUBLIC POLICY

The Public Policy Committee wishes to submit two propositions, the carrying out of which it believes the Illinois State Medical Society is capable of doing and doing with credit to itself.

The first has to do with the Lay Educational work. The second is a venture into a new and untried field.

When the Lay Education Committee began its work there were no precedents by which it might govern its activities. It was a pioneer venture into a field filled with ghosts and goblins representing long established ideas and ideals that had been considered necessary to maintain the legitimate and lofty standards that organized medicine has preserved for hundreds of years.

In all times the right sort of physician has considered it a plain duty to educate his patients in the ways of health; to warn them of impending dangers and to teach them those habits of life that would tend to keep them well.

He saw the need of wide dissemination of knowledge of this kind, but dared not venture to proclaim it publicly for fear of being classed as a charlatan. It was, and is, a wholesome and necessary restraint; but what the individual could not with propriety do, organized medicine could and should have done long ago.

The achievements of the Lay Education Committee need not be reviewed in this report. It is work which can no longer be considered a doubtful experiment. It is an established fact that has the stamp of approval of all physicians who have an under-

standing of what is due the public from the medical profession.

As the work of this committee progresses, more and heavier burdens will be placed upon it, and larger and larger sums of money will be required that it may properly function.

To depend from year to year upon voluntary subscriptions that come in answer to appeals by letter or through the pages of our State and local medical journals is unbusinesslike and a great hazard to the undertaking.

The solution of the financial question is the raising of an endowment fund of two hundred thousand dollars, which will yield an annual income of ten to twelve thousand dollars. A goodly part of the two hundred thousand should be and will be contributed by the public, who are the benefactors in this campaign of health education.

We are fortunate in having in our own profession a number of men of wealth and high ideals of service. There is not an iota of doubt that the majority of these men upon whom fortune has smiled will, if properly approached, not only contribute liberally to this fund, but will be willing to interest rich lay men and lay organizations in completing the fund.

This does not mean that the doctor of small means and limited practice shall be excused from doing his share in this work. For if it does not have his financial support, there is danger that it will have his active or passive opposition. There is an Italian proverb which says: "What I give away, I have. What I keep, I lose."

Let us not delay in this vital matter, but let us impose upon our Lay Education Committee the burden of raising such an endowment fund.

Our second proposition is a measure that will necessitate the expenditure of a large sum of money, which, however, will not come out of the pockets of the doctors, but will be supplied by lay organizations. It will also necessitate the expenditure of a great deal of time, energy and careful thinking. This expenditure will be borne entirely by the medical profession.

It is an institution that will be controlled, managed and operated by physicians. It is an outstanding instance where business men of influence and financial backing have requested the medical profession to take the initiative in forming an organization which will stand upon its own feet and function without orders from any other group.

At a meeting of the Illinois Relations Committee of the Chicago Association of Commerce held shortly after the Murphysboro disaster the discussion centered upon making an appeal to the physicians of the state to form a permanent organization or reserve corps to handle emergencies of this kind, the Chicago Association of Commerce to furnish financial aid for such an undertaking.

When the call in the southern part of the state went out for physicians to minister to the stricken people there was no organization to hear or answer. The physicians who responded did so as individuals,

without leadership and without plans of concerted and effective action. In spite of this lack of an organized body, the physicians, nurses and orderlies who went to Murphysboro performed a great duty creditably and well.

The subject was brought to the attention of the Physicians Fellowship Club, freely discussed and referred to the Board of Trustees, to consider ways and means of establishing a Reserve Corps throughout the State of Illinois, with depots of hospital and field supplies requisite to the care of disasters which may in the future occur in the State of Illinois.

A committee appointed by the president of the Physicians Fellowship Club requests the Committee on Public Policy of the Illinois State Medical Society to bring this matter to the attention of the House of Delegates of this Society. Neither the Committee on Public Policy nor the committee from the Physicians Fellowship Club believe that a project of this kind can be successfully carried out unless it has the supervision or the approval of the Illinois State Medical Society.

The Physicians Fellowship Club committee designated Dr. Martin M. Ritter, one of its members, who is also a member of the Illinois Relations Committee of the Chicago Association of Commerce, to report the action of the trustees to that body.

The following motion of the Physicians Fellowship Club Committee was submitted by Dr. Ritter to the Illinois Relations Committee of the Chicago Association of Commerce:

"That the Physicians Fellowship Club through its committee suggests to the Public Policy Committee of the Illinois State Medical Society that the Illinois State Medical Society be petitioned to organize the different county societies, for which physicians, nurses and orderlies are required.

That the society petition the Chicago Association of Commerce through its Illinois Relations Committee to lend its financial and moral support to this movement.

That these mobile medical units be prepared to respond immediately, and give such aid as necessary under the supervision of the Chicago Association of Commerce.

That the finances required to carry on this program be arranged by the Association of Commerce, and that this association also furnish the first aid supplies as required by the medical unit until such time as other state or national organization supply the same."

At a meeting of the Illinois Relations Committee of the Chicago Chamber of Commerce held Friday, May 8, 1925, the following motion was made and passed by that committee:

"A motion was made, duly seconded and carried that the Illinois Relations Committee is in sympathy with the work carried on by the Physicians Fellowship Club in relation to the formation of an emergency relief unit, and the committee respectfully requests that the Physicians Fellowship Club report to the Illinois Relations Committee its progress and any

suggestions wherein the Illinois Relations Committee may cooperate."

This is a formidable undertaking, but in view of the fact that no Relief Association is in a position to offer instant and immediate medical and surgical service in times of great disasters, it would seem to be the duty of the physicians of the State of Illinois to assume this responsibility.

It is not necessary in this report to present details of organization of a Medical Reserve Corps, which will be ready to function whenever and wherever in the State of Illinois the need requires.

The Committee on Public Policy recommends to your earnest consideration, discussion and specific action in these important matters.

EMMET KEATING,
Chairman.
WARREN JOHNSON.
JOHN F. SLOAN.

Dr. R. R. Duff, Chicago: The only thing that I have to say in reference to this report is that I was fortunate enough to be on that train that night and reached Murphysboro at 7:30 Thursday morning, the morning following the disaster. The conditions I found were appalling. We had forty-two physicians and surgeons, twenty-four nurses and ten orderlies. We were assigned immediately to the Eagle's Club where we found nothing but debris two inches thick on the floor. Within a half hour we were well organized and had forty cots ready and by noontime we had fifty-four casualties. I left a man in charge at the Eagle's Club and went immediately to St. Andrew's Hospital. They had no heat, light or water. There were one hundred and twenty-five severe casualties. Going into the basement they were lying in the engine room, the laundry and the toilets. We started to function immediately and within seventy-two hours we had performed sixty-three major operations. The local men were splendid in their cooperation. Our experience with the Red Cross was unfortunate. We found there was so much red tape that the organization was absolutely inefficient. Supplies were ample.

I am extremely anxious that the house delegates come to some definite understanding in the formation of an automobile unit which is to take in the entire state so we will be fortified in case of a future disaster.

It was moved that the report of the Committee on Public Policy be accepted. Motion seconded and carried.

NEW BUSINESS

The Secretary read the following letter from Dr. William C. Woodward, Executive Secretary, Bureau of Legal Medicine and Legislation of the American Medical Association:

Dear Doctor Camp:

Public reports indicate that the President will submit to Congress in December next recommendations for reductions in federal taxes. Every effort should be made, therefore, NOW to induce him to recommend reductions in the tax burdens so long complained of by the medical profession, namely:

1. *The war tax under the Harrison Narcotic Law.*
2. *The tax on traveling expenses necessary for attendance at meetings of medical societies.*
3. *The tax on the expenses of postgraduate study.*

1. *The war tax under the Harrison Narcotic Law.* A tax under the Harrison Narcotic Law is necessary to enable the United States Government to retain jurisdiction over intrastate matters arising under it. The one dollar tax originally imposed was ample for this purpose, the constitutionality of the law having been sustained by the United States Supreme Court while the one dollar tax was in force. The three dollar tax was first imposed by the Revenue Act of 1918, as a part of the general scheme to increase taxes to meet the expenses of the war. The other war taxes have been very generally abolished but the tax on the medical profession under the Harrison Narcotic Act still remains. It is an unjust, iniquitous discrimination against the medical profession and should be removed.

2. *The tax on traveling expenses necessary for attendance at meetings of medical societies.* The Revenue Act of 1924, following the Revenue Act of 1921, authorizes the deduction of all ordinary and necessary expenses paid or incurred in carrying on any trade or business, before the computation of federal income taxes. It specifically authorizes the deduction of traveling expenses incurred in the pursuit of a trade or business. The Commissioner of Internal Revenue, however, denies the right of the physician to make any such deduction in so far as relates to traveling expenses incurred in attending meetings of medical societies. The physician who attends a meeting of a medical society for the purpose of increasing his professional knowledge and skill is thus required by the Commissioner of Internal Revenue to pay a tax in order to avail himself of the opportunity to do so. This seems clearly contrary to public policy. It is not in keeping with the Commissioner's other interpretation of the law, which allows business men generally to deduct traveling expenses incurred in replenishing and enlarging their current business resources. It is nothing more nor less than a tax on the knowledge and skill necessary for the prevention of disease, and the relief and cure of suffering, injuries and disease.

3. *The tax on the expenses of postgraduate study.* The Revenue Act of 1924 authorizes the deduction of all ordinary and necessary expenses paid or in-

curred in carrying on any business or trade which covers all ordinary and necessary expenses of the practice of medicine. The Commissioner of Internal Revenue, however, has ruled that the expenses of post-graduate study are not ordinary and necessary expenses incident to the practice of medicine, and are therefore not deductible. In effect, he requires the physician to pay a tax on the cost of post-graduate study and on the acquisition of knowledge and skill essential to his professional success. The tax seems clearly contrary to public policy. It is not in harmony with the practice allowed by law and recognized by the Commissioner under which manufacturers and merchants are allowed to deduct as expenses of carrying on their business the cost of replenishing and extending their current business resources.

It is urged that the Illinois State Medical Society adopt appropriate resolutions protesting against the taxes named above and that it instruct its officers to bring their protest and a prayer for relief to the attention of the President and Secretary of the Treasury, in order that the President may recommend to Congress appropriate relief.

Copies of any resolutions adopted should be sent to the President and Secretary of the Treasury, and to every senator and representative from your state. Please send a copy of any such resolution to this Bureau.

Yours truly,

WM. C. WOODWARD,

Executive Secretary, Bureau of Legal Medicine and Legislation.

It was moved this letter be referred to the Committee on Resolutions. Motion seconded and carried.

The Secretary read the following letter from the Council on Medical Education and Hospitals of the American Medical Association:

My Dear Doctor Camp:

As you doubtless know, the Council on Medical Education and Hospitals has for years maintained a list of hospitals that provide acceptable internships for medical graduates. This work has been an obvious benefit to prospective interns, to medical schools, and to the hospitals themselves as well as to the attending staffs of hospitals.

In view of the State Society's relation to and consequent interest in hospital matters, it is desirable that there be appointed a strong committee of at least three members to attend to matters relating to hospital policy and to cooperate with the Council in the revision of this list from time to time. There may be other hospitals that are qualified, or could be induced to qualify, to give the fifth year in medicine, and there is always a possibility that some on the list may need to make improvements or even to be removed from the list.

These are all proper matters for the Hospital Committee of the State Medical Society and, of course, tend to strengthen the position of the Society, particularly on hospital matters.

I trust that you can secure the appointment of a strong committee, preferably representing different parts of the state, and let us know their names and addresses at your earliest convenience.

Very truly yours,

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS,
N. P. Colwell, Secretary.

Dr. Edward Bowe, Jacksonville, moved that the letter be referred to the Committee on Resolutions. Motion seconded and carried.

Committee on Resolutions: The Chair appointed as the Committee on Resolutions, Dr. C. E. Humiston, Chicago; Dr. J. E. Tuite, Rockford, and Dr. Warren Pearce, Quincy.

Mr. Mather Pfeifferberger, Alton, presented two resolutions, one to commend the Editor, Dr. Charles J. Whalen, on the way he has conducted the JOURNAL and the second, a resolution commending the work of the Lay Education Committee, especially Miss Keller. (These resolutions are printed in full in the transactions of Thursday morning.) These resolutions were referred to the Committee on Resolutions.

Dr. E. P. Sloan, Bloomington, made a motion to change the wording of Section 1 of Chapter II of the By-laws by adding the words, "At least ten days" in line four, immediately following the word, "convene," making the paragraph read as follows:

Chapter II.—Annual Session of the Society:

Sec. 1. The annual session shall convene on the third Tuesday of May, but the President, the Council concurring, may change this time in order that the Society may convene *at least ten days* before the date set for the meeting of the American Medical Association or for any other good and sufficient reason. The place of holding the annual session shall be determined by the House of Delegates.

Motion seconded by Dr. S. J. McNeill and carried.

Dr. Edmund D. Levinsohn, Chicago, offered a resolution concerning preferred claims, which was referred to the Committee on Resolutions. (This appears in full in the transactions of Thursday morning.)

Dr. C. S. Skaggs, East St. Louis, made the suggestion that in order for the medical profession to obtain a hearing in the legislature it was necessary to educate the representatives and senators. He suggested that Dr. Neal put his bulletin into the hands of all the doctors.

Dr. C. B. King, Chicago: Dr. Chapman spoke in his report about x-ray films. We have had some communication on this very case that Dr. Chapman spoke of. Mr. Folonie has prepared the following contract:

ORDER FOR X-RAY

To.....

You are hereby requested to take x-ray plates of certain parts of the person of the undersigned for the information of, my physician, and as part of his examination into my bodily state, with the understanding that the plates so taken are to remain your property, subject to examination by said physician or upon his order from time to time.

.....
Patient.

To.....

In accordance with the order on reverse side hereof, please take x-ray plates of.....

(Designate portions

..... with
of body)

a view to ascertaining condition respecting.....

.....

(Tentative Diagnosis)

.....
Physician.

Dr. C. B. King, Chicago: I was requested to present the following petition. I do not think it belongs to the Committee on Resolutions. I do not know that there is any Committee to handle it. It was handed to me by Dr. E. S. Blaine, the radiologist.

To the House of Delegates of the Illinois State Medical Society at Quincy, May 19, 1925.

PETITION:

It is the desire of a large number of the members of this Society who are engaged in the special branch of medicine of Roentgenology and Radium Therapy that consideration be given to the question of the formation of a Section on Roentgenology and Radium Therapy. This move is supported by many of the members of the Central Illinois Radiological Society and of the Chicago Roentgen Society who trust that this progressive move be made which is in keeping with similar steps being taken by the American Medical Association and the Wisconsin State Medical Society. Much valuable and instructive x-ray and radium material will thus be made accessible to the entire membership of the Illinois State Society through its official publications and a proper step will be taken in the direction of a closer cooperation between Illinois Roentgenologists and the branches of

medicine, surgery and the various specialties of the State Society.

EDW. S. BLAINE, Chicago.
C. J. McCULLOUGH, Decatur.
E. G. WILLIAMS, Danville.
HAROLD SWANBERG, Quincy.

Dr. E. P. Sloan, Bloomington, moved that it be referred to the Committee.

Dr. Edward Bowe, Jacksonville: I move that it be referred to the Committee on Hospitals and Medical Education. The question is whether we cannot put them into the general section and let them present their papers there. It will do us all a great deal of good.

Dr. C. B. King, Chicago: You remember in our report on malpractice a good many x-ray burns were recorded.

Dr. E. P. Sloan, Bloomington: I withdraw my resolution.

Dr. Edward Bowe's motion was seconded and carried and the petition referred to the old Committee on Hospitals and Medical Education which has not functioned for the present year.

The Secretary read the following communication regarding the appointment of delegates to the Atlantic City meeting of the American Medical Association:

The By-Laws of the American Medical Association requires that a certificate of election of delegates to the annual meeting of that organization be in the hands of their Secretary seven days before the first day of the meeting. On account of the fact that it would be impossible for the House of Delegates of the Illinois State Medical Society to elect delegates this year until Thursday, May 21, and the first day of the A. M. A. meeting is May 25, it was necessary for the Council of the Illinois State Medical Society to elect the delegates, alternates and certify the election to the A. M. A. Secretary.

The following delegates and alternates were elected: H. P. Beirne, R. L. Green, Emmet Keating, Chas. E. Humiston, J. W. Vanderslice, Roland Hazen, T. W. Gillespie, J. V. Fowler, Ernest Ford, J. H. Hutton.

These men were elected by ballot, by the Council on May 8, 1925, and properly certified in compliance with the A. M. A. by-laws on May 14. The House of Delegates should approve their election in order that Illinois will be entitled to a full delegation in the House of Delegates of the American Medical Association at Atlantic City, May 25 to 29, 1925.

It was moved that this report be accepted.

Dr. Edward Bowe, Jacksonville: This just applies to this year. As I understand, the delegates serve two years. These delegates elected by the Council apply only for this emergency.

The House of Delegates should elect delegates this year.

Dr. R. R. Ferguson, Chicago: The Council elected the delegates only in this emergency. The House should go on and elect these men to be regular delegates. In other words, two of the Chicago men should be elected for two years and Dr. Keating for one year.

Dr. Edward Bowe, Jacksonville: This House of Delegates elects these delegates for this year, but it should go on record and elect another set of delegates for next year.

Dr. W. D. Chapman, Silvis: I agree with Dr. Bowe. I move that emergency action of the Council be sustained.

Motion seconded.

Dr. W. D. Chapman, Silvis: The By-laws prescribe that the Councilors act for the House of Delegates in an emergency.

Dr. Edward Bowe, Jacksonville: It is only binding for one year.

Dr. W. D. Chapman, Silvis: The House of Delegates is in session now.

The Chair: Does this House of Delegates want to ratify the action taken by the Council?

Dr. E. P. Sloan, Bloomington: I wish to make an explanation. There is nothing in the By-laws or Constitution that says anything about the election of your delegates. They are unprovided for. Dr. McNeill says that after that petition was acknowledged it was too late to change this meeting to a time when it would make it possible to legally elect delegates. As a substitute motion I move that we endorse the action of the Council so far as the delegates for this year are concerned; that we ask the Committee on Resolutions to prepare a new article to provide for the election of delegates next year or elect these delegates for two years.

The Secretary: The By-laws of the American Medical Association state that delegates must be elected for two years. The thing that prompted this action was two or three letters which we received from the Secretary. I called on Dr. West and he said the same situation came up in California last year. The Council there was asked to select delegates which were later ratified by the house in session. When I certified to the election of these delegates I certified that they were elected for two years. I am

afraid if any change is made that these men will not be properly seated.

Dr. F. F. Hoffmann, Chicago: I second the original motion to accept the action of the Council.

The Chair: If we send in our delegates for this year they are going to be seated. If we send in a list of delegates for next year they will be seated. This House of Delegates has the right to elect delegates. Just because this meeting is held too late to elect delegates in time to certify them does not deprive us of our right to elect delegates for next year. Let us endorse them for this year and let next year take care of itself.

Dr. Edward Bowe, Jacksonville: This action only holds for this year. No legislature can bind a legislature of the future, no House of Delegates sitting here in the Illinois State Medical Society this year can bind the House of Delegates for next year.

The Chair: The question is what is the status of our delegates in that they have been certified for two years. We do not want them unseated.

Dr. J. C. Krafft, Chicago: Will the Secretary read the rules of the American Medical Association?

The Chair: There is nothing in the By-laws opposing this action. We had originally planned to bring this up on Thursday morning.

Dr. J. P. Pflock, Chicago: I move that the motion be tabled.

Motion seconded and carried.

The meeting adjourned at 11:58 p. m. to meet at 8:00 a. m., Thursday morning.

SECOND SESSION

Thursday, May 21, 1925

The second meeting of the House of Delegates was called to order by Dr. John R. Neal, First Vice-President, Thursday, May 21, 1925, at 8:30 a. m.

The first order of business was the report of the Credentials Committee. Dr. R. R. Ferguson, Chairman reported that seventy-seven delegates had been seated; forty-six from downstate and thirty-one from Chicago. He moved that the report be adopted. Motion seconded and carried.

The Secretary called the roll and announced that a quorum was present.

On motion duly made and seconded it was voted that the reading of the minutes of the previous meeting be dispensed with.

The next order of business was the election of officers.

Dr. E. P. Coleman, Canton, nominated Dr. Mather Pfeiffenberger of Alton for President-elect. Nomination seconded.

Dr. Andy Hall, Mt. Vernon, moved that the nominations be closed and that the Secretary be instructed to cast the ballot of the House of Delegates for Dr. Pfeiffenberger as President-elect. Motion seconded and unanimously carried. The Chair declared Dr. Pfeiffenberger elected.

Dr. C. P. White, Kewanee, nominated Dr. Warren Pearce, Quincy, for First Vice-President. Nomination seconded.

Dr. W. D. Chapman, Silvis, moved that the nominations be closed and that the Secretary be instructed to cast the ballot of the House of Delegates for Dr. Pearce as First Vice-President. Motion seconded and unanimously carried. The Chair declared Dr. Pearce elected.

Dr. Edith B. Lowry, Springfield, nominated Dr. J. P. Pflock, Chicago, for Second Vice-President. Nomination seconded.

Dr. G. L. Kaufman, Chicago, moved that the nominations be closed and that the Secretary be instructed to cast the ballot of the House of Delegates for Dr. Pflock as Second Vice-President. Motion seconded and carried. The Chair declared Dr. Pflock elected.

Dr. Andy Hall, Mt. Vernon, nominated Dr. A. J. Markley, Belvidere, for Treasurer. Nomination seconded.

Dr. F. F. Hoffmann, Chicago, moved that the nominations be closed and that the Secretary be instructed to cast the ballot of the House of Delegates for Dr. Markley, as Treasurer. Motion seconded and carried. The Chair declared Dr. Markley elected.

Dr. W. D. Chapman, Silvis, nominated Dr. H. M. Camp for Secretary. Nomination seconded.

It was moved that nominations be closed and the President cast the ballot of the House of Delegates for Dr. Camp as Secretary. Motion seconded and carried. The Chair declared Dr. Camp elected.

For Councilor for the Third District Dr. J.

H. Hutton, Chicago, nominated Dr. J. S. Nagel, Chicago, to succeed himself. Nomination seconded.

Dr. C. B. King, Chicago, moved that the nominations be closed and that the Secretary be instructed to cast the ballot of the House of Delegates for Dr. Nagel as Council for the Third District. Motion seconded and carried. The Chair declared Dr. Nagel elected.

For Councilor of the Fourth District, Dr. Leopold, Moline, nominated Dr. W. D. Chapman, Silvis. Nomination seconded.

It was moved that the nominations be closed and the Secretary be instructed to cast the ballot for the House of Delegates for Dr. Chapman as Council for the Fourth District. Motion seconded and carried. The Chair declared Dr. Chapman elected.

For Councilor of the Fifth District, Dr. R. O. Hawthorne, Monticello, nominated Dr. S. C. Munson, Springfield. Nomination seconded.

It was moved that the nominations be closed and that the Secretary be instructed to cast the ballot of the House of Delegates for Dr. Munson as Council for the Fifth District. Motion seconded and carried. The Chair declared Dr. Munson elected.

For Councilor of the Seventh District Dr. M. P. Parrish, Decatur, was nominated. Nomination seconded.

It was moved the nominations be closed and that the Secretary be instructed to cast the ballot of the House of Delegates for Dr. Parrish as Councilor of the Seventh District. Motion seconded and carried. The Chair declared Dr. Parrish elected.

Dr. E. P. Sloan, Bloomington, moved the following resolution be adopted:

Resolved, That the House of Delegates validate and approve the action of the Council in its emergency election of delegates to the Atlantic City Meeting of the American Medical Association and interprets such election to be for this meeting only.

Motion seconded by Dr. W. D. Chapman, Silvis, and carried.

The next order of business was the election of delegates to the American Medical Association. Dr. R. W. McInnes, Belvidere; Dr. J. W. Vanderslice, Oak Park; Dr. C. E. Humiston,

cago, and Dr. E. W. Fiegenbaum, Edwardsville, were nominated as delegates.

Dr. E. P. Sloan moved that the nominations be closed and that the Secretary be instructed to cast the ballot of the House of Delegates for these four men as delegates. Motion seconded and carried and the Chair declared them elected.

For alternates Dr. C. S. Nelson, Springfield; Dr. J. W. Hammond, Mount Vernon; Dr. J. V. Fowler, Chicago, and Dr. Ernest Ford, Evans-ton, were nominated.

Dr. E. P. Sloan, Bloomington, moved that the nominations be closed and that the Secretary be instructed to cast the ballot of the House of Delegates for these four men for alternates. Motion seconded and carried. The Chair declared them elected.

The next order of business was the election of Standing Committees. As members of the Committee on Public Policy, Dr. Emmet Keating, Chicago; Dr. Warren Johnson, Chicago, and Dr. John F. Sloan, Peoria, were nominated and duly elected.

For the Committee on Medical Legislation, Dr. John R. Neal, Springfield, Chairman; Dr. Chas. E. Humiston, Chicago, and Edward Bowe, Jacksonville, were nominated and duly elected.

For the Medico-Legal Committee, Dr. Walter Wilhelmj, East St. Louis, and Dr. C. B. King, Chicago, were nominated and duly elected.

For the Committee on Relations to Public Health Administration, Dr. A. H. Geiger, Chairman, Chicago; Dr. J. E. Tuite, Rockford; Dr. E. P. Coleman, Canton; Dr. R. Hayes, Chicago, and Dr. John R. Harger, Chicago, were nominated and duly elected.

The next order of business was the report of the Committee on Resolutions. The following resolution was read by Dr. C. E. Humiston, Chairman, Chicago:

RESOLUTION ON ILLNESS OF DR. L. C. TAYLOR

I. WHEREAS, for a period of many years the best interests of the Illinois State Medical Society have been served by the untiring devotion, scholarly achievement and high courage of Dr. L. C. Taylor, and,

WHEREAS, in the course of the year 1924-25 Dr. Taylor has, as the President of the Illinois State Medical Society, guided its policies wisely and equably, with full consideration for the rights and privileges of every member and with the vision of service for the members as physicians and for the organization the force for progress,

Be It Resolved, That the Illinois State Medical Society, assembled in its seventy-fifth annual meeting at Quincy, Illinois, do hereby extend to Dr. Taylor our deep regrets that he has been prevented by illness from occupying the President's chair at this time. That we express our appreciation of his years of leadership, his counsel and advice, and our earnest hope that he may soon again be with us.

CHAS. E. HUMISTON.

JOHN E. TUITE.

Dr. Humiston moved adoption of this resolution. Motion seconded and carried.

RESOLUTION COMPLIMENTING THE EDITOR

II. WHEREAS, the ILLINOIS MEDICAL JOURNAL has attained, under the editorship of Dr. Chas. J. Whalen, a foremost place among the world's scientific publications, and,

WHEREAS, the Illinois State Medical Society has profited greatly in the eyes of the professional world and the general public from the fearless leadership of Dr. Whalen and his unstinted sacrifice of all personal advantage for the advancement of organized medicine,

Be It Hereby Resolved, That the Illinois State Medical Society assembled in its seventy-fifth annual meeting at Quincy, Illinois, do extend to Dr. Whalen most cordial thanks for his service to the Society and forthright loyalty to the ideals he has held before us.

CHAS. E. HUMISTON.

Dr. Humiston moved adoption of this resolution. Motion seconded and carried.

Dr. C. J. Whalen, Chicago: This is an unexpected tribute. I was unaware of the fact that I was going to receive this little honorarium this morning. I appreciate it deeply, very deeply indeed. I have over a period of years, as Dr. Humiston said, made many sacrifices and I am glad that the medical profession at least appreciates, as this resolution testifies, for I think they appreciate what I have tried to do for the medical profession of Illinois. I thank you.

RESOLUTION COMMENDING THE WORK OF MISS B. C. KELLER

III. WHEREAS, the Illinois State Medical Society has embarked on a Lay Education campaign, and

WHEREAS, Miss B. C. Keller has had charge of this work and performed that work most efficiently,

Therefore, Be It Resolved, That the House of Delegates of the Illinois State Medical Society express its appreciation of the valued service which Miss Keller has rendered.

WARREN PEARCE,

CHAS. E. HUMISTON.

JOHN E. TUITE.

Dr. Humiston moved adoption of this resolution. Motion second and carried.

Miss B. C. Keller, Chicago: There is nothing that I can say at this particular time that will make clear as I should like to make clear the feeling with which I approach the end of this first year's work in the Illinois State Medical Society. I have enjoyed your fights; I have tremendous enthusiasm for the way you can work a well oiled organization out of a somewhat tempestuous beginning. I have the greatest respect for the men and women who have given themselves not only to Lay Education but to organized medicine. I want to say whether this work goes on or whether it does not, whether you use this method or some other method for the organization of the medical profession, that I am with you first, last and all the time. There is nothing the Illinois State Medical Society can ask that will be quite big enough to express my gratitude.

RESOLUTION ON AN INCREASE IN PER CAPITA TAX

IV. WHEREAS, the expenses of the Illinois State Medical Society have been increasing year by year through the increased demands on the Medico-Legal Committee, Legislative Committee, and various other branches of the Society, and,

WHEREAS, the Lay Education work has been conducted during the past fifteen months by approximately 20 per cent of the membership of the Society, and,

WHEREAS, the funds of the Lay Education Committee are now practically exhausted,

Therefore Be It Resolved, By the Resolutions Committee of the Illinois State Medical Society that we recommend to the House of Delegates of this Society that:

1. The annual per capita tax be increased to eight dollars per year, effective on and after January 1, 1926.
2. That the work of the Lay Education Committee be taken over by the Society.

CHAS. E. HUMISTON.
JOHN E. TUITE.
WARREN PEARCE.

Dr. Humiston moved adoption of this resolution. Motion seconded and carried.

RESOLUTION ON THE DISCOVERY OF SCARLET FEVER SERUM

V. WHEREAS, the discovery of the cause, method of prevention and cure of Scarlet Fever has set a new milestone for medical progress.

Be It Resolved, That we, the members of the Illinois State Medical Society, assembled at Quincy in our seventy-fifth annual session, do hereby express our appreciation of the great work done by Drs.

George and Gladys Dick in behalf of the sick and suffering children of the world.

C. E. HUMISTON.
JOHN E. TUITE.
WARREN PEARCE.

Dr. Humiston moved adoption of this resolution. Motion seconded and carried.

RESOLUTION ON AMERICAN MEDICAL ASSOCIATION PROBLEMS

VI. *Resolved*, That the House of Delegates recommend the appointment of a committee of three by the President of the Illinois State Medical Society to confer with the Council on medical education and hospitals of the American Medical Association on hospital matters.

Dr. Humiston moved that this resolution be adopted. Motion seconded and carried.

RESOLUTION CONCERNING PHYSICIANS' INCOME TAX RETURNS

VII. *Resolved*, That the recommendations made by the Bureau of Legal Medicine and Legislation of the American Medical Association in reference to the recommendations to the President of the United States for a reduction in the tax burdens so long complained of by the medical profession namely:

- '1. The war tax under the Harrison Narcotic Law.
 2. The tax on traveling expenses necessary for attendance at meetings of medical societies.
 3. The tax on the expenses of postgraduate study.'
- be approved by the House of Delegates.

Dr. Humiston moved adoption of this resolution. Motion seconded and carried.

RESOLUTION ON PHYSICIANS' LIEN

VIII. WHEREAS, the medical profession and hospitals are frequently called upon to render emergency aid in injury cases, better known as public liability cases, and,

WHEREAS, in a majority of these cases the medical profession and hospitals lose their justly earned fees, therefore,

Be It Resolved, That a committee be appointed to present to the State Legislature a bill designed to cover such conditions, thus enabling the medical profession and hospitals to collect their just dues by virtue of a lien similar to that of other professions.

CHAS. E. HUMISTON.
JOHN E. TUITE.
WARREN PEARCE.

It was moved that this resolution be referred to the Legislative Committee with power to act. Motion seconded and carried.

RESOLUTION ON THE WORKMEN'S COMPENSATION

IX. WHEREAS, the Workmen's Compensation Act of Illinois at present allows an injured employee to select his own physician to care for him only when the employee is willing to pay him out of his own pocket, thus practically compelling the employee to

accept services from a physician whom, in many cases, he does not desire to have treat him, and

WHEREAS, this condition of affairs is a direct challenge to the very commendable American system of living, supported by long custom and tradition, wherein the sick and injured or their families select those whom they wish to treat them, and

WHEREAS, this provision of the Compensation Act in many cases takes away a large amount of work from capable and deserving individual physicians, and in many cases turns it into the hands of poorly paid contract system physicians, thus tending to lower the economic and professional standing of many members of the profession, and

WHEREAS, in cases of severe injury a workman is logically and justly entitled to be in the hands of a physician of his own choice who can inspire needed confidence in virtue of past successful treatment in the family or through well known reputation for high class service, and

WHEREAS, such an obnoxious provision now in the Illinois law is not contained in the uniform Workmen's Compensation Act formulated for the states by the commissioners for uniform laws of the American Bar Association, and,

WHEREAS, this system of virtual corporation treatment forced on employees and physicians by the above mentioned stipulation of this Act is closely allied to, and but a step to the inauguration of state medicine,

Therefore, Be It Resolved, That the Legislative Committee of the Illinois State Medical Society be urged to seek an amendment to the present Workmen's Compensation Act providing that after the rendering of first aid by an employer, an employee, if he so desires, may have the choice of his own physician, this physician to be compensated for his services at reasonable rates by the employer.

Provided Further, That all questions as to adequacy of treatment or compensation be referred to a committee of the Industrial Board on which the medical profession has suitable representation.

FELIX H. RENBERG.
A. G. BOSLER.
G. J. HAGENS.
E. J. O'NEILL.
W. S. BOUGHER.

It was moved that this resolution be referred to the Legislative Committee with power to act. Motion seconded and carried.

REPORT OF COMMITTEE ON MEDICAL HISTORY

The next order of business was the report of the Committee on Medical History, submitted by Dr. Charles J. Whalen, Chicago, Chairman.

Rather than permit a lack of comprehensiveness to enter into the compilation of the history of medical practice in the State of Illinois, the Committee appointed to edit this volume announces that publication will be deferred until later in the year.

This is a disappointment to those who had hoped

to be able to include the issuance of the history with the current diamond jubilee celebration of the Illinois State Medical Society. Delay has resulted from the tardiness with which contributions have been received by the committee. Promises have been many, but promptness at a minimum.

County and sectional secretaries of various societies and departments have managed in only a few instances to fulfill their expectations in the matter of delivery of material, but in an overwhelming number have asked for more time. Of a necessity this was granted by the committee, although such concessions inhibit the completion of the work as an item of commemorative incorporation into the annals and proceedings of this seventy-fifth anniversary meeting of the Illinois State Medical Society.

This is most unfortunate and might have been obviated if those who failed in their promises had informed the committee in time so that outside help might have been put to work, as is now being done. In order to have the volume ready, December 15, 1924, was set as an ultimate hour for the receipt of all material for compilation and selection. When this hour or "deadline," as it is known in publishers' parlance, had arrived there were more sections missing than had been heard from. No amount of solicitation had availed to bring the absentees to time.

All this in the face of the fact that when the appeal was made for contributors, much encouragement was received from medical men who volunteered unlimited aid.

When the "deadline" was upon the committee instead of contributions there lay before us apologies for these defections. Too late then to substitute lay help in time to have the volume ready now, it has been necessary to postpone publication. A wealth of material is at hand, and when completed, the book will more than justify its prognostications.

What progress has been made with collecting data and reminiscences for the history proves indubitably both the need for such a volume and the interest from historical, economic, geographical and scientific perspectives, that this volume will hold.

Request is made again that physicians search both the archives of their own families and neighbors and request their patients to furnish what data may have come down from pioneer ancestors relative to the obscure years of the early days of the Illinois country. Considering that Illinois has become the medical center of the world the importance of this work cannot be overestimated.

Photographs of early days and pioneer physicians and documentary relics, such as diaries, maps and equipment records will aid in embellishing the book. It will be a much worth while volume, even from a literary standpoint. Appeal is made again for support of the book by subscription and for representation in the book by contribution of material. Appreciation

is made publicly for those, who, in spite of pressure of business have already helped out from both angles.

Respectfully submitted,

CHARLES J. WHALEN,
Chairman.

O. B. WILL.

CHARLES B. JOHNSON.

CARL E. BLACK.

GEORGE H. WEAVER.

GEORGE A. DICUS.

LUCIUS H. ZEUCH.

JAMES H. HUTTON.

It was moved that the report be accepted. Motion seconded and carried.

The next order of business was the selection of the meeting place for 1926. Invitations were received from Champaign and Moline. On vote taken, Champaign received forty-two. Dr. W. D. Chapman, Silvis, moved that the vote be made unanimous for Champaign. Motion seconded and carried.

On motion duly made, seconded and unanimously carried it was voted that the Committee on Resolutions and the Secretary prepare suitable resolutions of thanks to the profession of Quincy and the various other people who entertained the Society.

Adjournment *sine die* at 9:30.

EXHIBITORS' DIRECTORY

National Baby Congress and Health Exposition, American Exposition Palace, Chicago, May 2-10, 1925, Sponsored and Supervised by the Illinois State Medical Society Enforcing Ethical and Scientific Standards of the American Medical Association.

The committee on medical supervision, Illinois State Medical Society, recommends the following exhibitors to the favorable consideration of physicians.

LIST OF EXHIBITORS APPROVED BY THE ILLINOIS STATE MEDICAL SOCIETY

FOR DISPLAY OF APPROVED PRODUCTS
IN THE NATIONAL BABY CONGRESS AND HEALTH
EXPOSITION

Chicago, May 2-10, 1925

AMERICAN BARLEY SALES CORPORATION, 77 W. Washington St., Chicago. Distributors of Johnson's Pure Barley Flour for infant feeding and Cream of Barley, for breakfast cereal.

AMERICAN FLYER MANUFACTURING Co., 2225 S. Halsted St., Chicago. (W. O. Coleman, President.)

AMERICAN FLYER ELECTRIC AND MECHANICAL TOY TRAINS. Structo Hoisting Toys and Automobiles.

AMERICAN MEDICAL ASSOCIATION, 535 No. Dearborn St., Chicago. Showing activities of the Association

for education of the public. "HYGEIA," a monthly magazine of health for the laity. Bureau of Health and Public Instruction and Bureau of Investigation. AUBURNDALE GOLDFISH COMPANY, 1449 West Madison St., Chicago. Exhibit aquariums "common and fancy Goldfish, water plants and many other items connected therewith."

BARBEE'S BABY SCALE RENTAL BUREAU AND SALES, 159 S. State St., Chicago, Telephone Central 5164. Reliable safety tray balance scales used for our rental service.

BORDEN FARM PRODUCTS Co. OF ILLINOIS. Sole distributors in Chicago of Borden's "Selected Milk" which sets a new high standard for Chicago's milk supply.

GEORGE BORGFELDT & COMPANY, 5 N. Wabash Ave., Chicago. (Walter H. Rhone.)

GEO. BORGFELDT & Co., New York, N. Y. Sole Licensee and Distributor of the genuine "K & K" Bye-Lo Baby Doll. "Everybody just loves the Bye-Lo Baby."

BOULEVARD BRIDGE BANK OF CHICAGO, Wrigley Building, donated 2,000 square feet of space to its customers for the exhibition of their products in the National Baby Congress and Health Exposition.

BOWMAN DAIRY Co. Distributors of milk, cream, butter, eggs and cottage cheese. For 50 years the leaders in quality. Select the best for yours! When you drink Bowman's Milk you drink the best milk that money can buy. For 50 years it has been the standard of quality.

CALUMET, THE WORLD'S GREATEST BAKING POWDER. You need not be afraid to let the children have all the home-baked things they want if you use Calumet because it is the purest of all leaveners.

CANTILEVER SHOE COMPANY, 162 N. State St., Chicago. (George H. Lambert, General Manager.)

THE CELOTEX COMPANY, 645 N. Michigan Ave., Chicago.

CHICAGO DISTRICT ICE ASSOCIATION, 37 So. Wabash Ave., Chicago. Featuring the advantages of proper refrigeration, with ice, of foods in the home, particularly in relation to its maintenance of nourishing qualities of children's foods.

CHICAGO ICE CREAM MANUFACTURERS ASSOCIATION, 1422 East 67th Place, Chicago. Ice cream manufacturers.

CHICAGO MEDICAL SOCIETY (E. J. Doering). Publisher of the Chicago Medical Society Bulletin and many other medical bulletins and journals.

CHICAGO MEDICAL SOCIETY MILK COMMISSION. Certified milk is a clean, fresh, raw, safe milk for infants and invalids.

CHICAGO MOTOR COACH Co. For clean, comfortable, healthful transportation to and from work ride atop a Motor Bus over Chicago's finest boulevards and through the city's most beautiful parks—it provides daily recreation.

CHICAGO PORTRAIT PHOTOGRAPHERS ASSOCIATION, 509 S. Wabash Ave., Chicago. Photographs of your family and yourself are lasting memories. Have yours taken.

CHICAGO WHOLESALE FISH & OYSTER DEALERS ASSO-

- CIATION, 236 No. Clark St., Chicago. Exhibiting research data relative to food values of fish, oysters and seafoods.
- CHIPPWEA SPRING WATER COMPANY, 527 Roosevelt Road. Distributors Chippewa Natural Spring Water, the Purest in the World; Chippewa Ginger Ale, Root Beer and Carbonated Water.
- CHRISTIANSSEN BROS. DAIRY CO., 2700 No. Campbell Ave., Chicago. Where cleanliness is permanent. We invite your inspection. Learn why a bottle of safe milk is a bottle of health.
- CLUB ALUMINUM COMPANY, COOK WITHOUT WATER, and retain the natural health-giving minerals of food. Use Club Aluminum Cooking Utensils. Club Aluminum Co., 1238-50 Fullerton Ave., Chicago, Ill.
- CONTINENTAL SCALE CO., 2126 W. 21st Pl., Chicago. Health scales. Your weight is an index to your health. Every well regulated home should have thoroughly dependable scales such as we make.
- CORCORAN MANUFACTURING COMPANY, Cincinnati, O. Manufacturers of "Not-a-Toy." Health and Happiness for Baby, relief from care of Mother.
- CORN PRODUCTS REFINING COMPANY, 200 E. Illinois St., Chicago. Displayed KARO—featuring its use as a carbohydrate in milk modification for infant feeding—MAZOLA, ARGO and KINGSFORDS CORN STARCHES, and LINIT STARCH.
- CRANE CO., 836 No. Michigan Ave., Chicago. Exhibiting a twice-fired vitreous lavatory, a dental lavatory, a baby's bath and a shower bath.
- DAIRY DRINK CO., 2825 Lexington St., Chicago. Pure wholesome milk contributes to health. It becomes more palatable and nutritious when combined with chocolate. Drink "D. D."
- EARNSHAW KNITTING COMPANY, 325 W. Jackson Blvd., Chicago. "VANTA BABY GARMENTS," manufactured without pins or buttons, guaranteed non-shrinkable; unnecessary to turn baby to put on garments. Recommended by doctors, nurses and hospitals.
- H. G. FISHER & COMPANY, 2322 Wabansia Ave., Chicago. Dealing in physicians' supplies.
- FOREST GLEN CREAMERY CO. A recipe for pink cheeks and sturdy little bodies. Give your youngsters Forest Glen Milk—Guaranteed Pure. 3737 Southport Ave. Lakeview 1158.
- THE HOOVER COMPANY, 1408 Republic Building, Chicago. Oldest and largest makers of electric cleaners. More than a million and a half satisfied users. Only "The Hoover Beats As It Sweeps As It Cleans."
- HORLICK'S MALTED MILK CO., Racine, Wis. Exhibit "Horlick's," the ORIGINAL Malted Milk for infants, invalids and convalescents. Also Horlick's Food, their maltose-dextrin milk modifier.
- R. C. HULL, 4727½ Ellis Ave., Chicago. Gold Medal Garnishing Knives.
- HYDROX CORPORATION. Main office and plant 24th St. at the Lake, Chicago. Manufacturers of Hydrox Ice Cream (purer because carbonated) and Hydrox Gingerale and other carbonated beverages.
- HYDROX CORPORATION, 24th Street at the Lake, Chicago. Manufacturers of Hydrox Ice Cream—"Purer Because Carbonated"—Hydrox Ginger Ale and other carbonated beverages.
- HYNISON, WESCOTT & DUNNING, Baltimore, Md. Mercurochrome and other pharmaceuticals. The Illinois Bell Telephone Company, 212 West Washington St., Chicago.
- J. G. INGRAM & SON, London, England. Manufacturers of Ingram's Transparent Nipples, the standard all over the world. Ernest Monnier, Inc., Boston, Mass. United States agents.
- JANES DIETARIAN CORPORATION, 7088 South Chicago Ave. Janes Chocolate Malted Milk Syrup, Cream of Cocoa Malted Milk, Janes Diet Loaf. Write for circular.
- THE JELL-O CO., INC., LeRoy, N. Y., Chicago office 326 W. Madison St. Manufacturers of Jell-O and D-Zerta, (a jelly powder for diabetics). Both put up in commercial and institution packages.
- F. W. JONES, 4237 Indiana Ave., Chicago. Cleaning Cream, Massage Cream, Shampoo, Head Lotion (Toilet Goods).
- JAS. S. KIRK & Co., 1232 W. North Ave., Chicago. Scientific soapmakers since 1839. Manufacturers of the famous "Jap Rose Health and Beauty Soap," Juvenile Baby Bath Castile, Green Soap for physicians and surgeons and other fine toilet and household soaps. All pure soaps—The Standard of Purity.
- J. L. KRAFT & BROS. CHEESE CO., 400 Rush St., Chicago. Manufacturers of Kraft Cheese in tins and in foil. Cheese—a health food, was the keynote of the Kraft Cheese Company display. Samples of cheese and circulars of food facts about cheese were distributed.
- KREN & DATO, 936 N. Michigan Boulevard, Chicago. Dealers in real estate.
- MATT MILLER, Laundry, 1637 West 22d St., Chicago. The scientific laundering of all washable fabrics.
- MELBA MANUFACTURING COMPANY, 4237 Indiana Avenue, Chicago, manufacturing chemists and perfumes. MELBA MANUFACTURING COMPANY maintained an expensive and very beautiful booth during the BABY CONGRESS AND HEALTH EXPOSITION, for free distribution of products of special interest to babies, nurses and mothers.
- They were most generous in supplying BABY POWDER, MASSAGE CREAM AND TOILET WATER to the BABY HOUSES for the entire week, and also presented the attending physicians with POWDER SUPPLIES for professional use.
- Their samples of MASSAGE CREAM, SHAVING CREAM, SHAMPOO, SKIN LOTION AND PERFUME were much in demand, and this POPULAR FIRM impressed its name firmly in the minds of the thousands of men and women attending the CONGRESS.
- BABY O'HARA, the prize baby, won the beautiful MELBA GOLD BASKET, containing CREAMS, POWDERS, BATH SALTS, TALCUMS, PERFUME, TOILET WATER,

everything to keep both the young lady and her mother luxuriously groomed for many days to come.

METROPOLITAN LIFE INSURANCE COMPANY, 140 N. Dearborn St., Chicago.

IRA J. MIX DAIRY COMPANY, 361 E. 30th St., Chicago. Mix Mix's milk with your menu. From Country to You in Glass. Call Victory 1040.

ERNEST MONNIER, INC., 127 Federal St., Boston, Mass. U. S. Agent for Ingram's Transparent Nipples.

NATIONAL MILK COMPANY, 2501 Southport Ave., Chicago. Distributors of high grade milk, cream and dairy products.

NESTLE'S FOOD COMPANY, INC., 130 Williams St., New York City. (Chicago Representative, Leon A. Turner, P. O. Box 58). Mfg. Baby Foods, Nestle's Lactogen Milk Food, Malted Milk.

THE NON-PTOSIS SERVICE, 1013 Marshall Field Annex, Chicago. Stands for better health and higher spirits. The support produced in any ptosis garment is a brace that has no equal.

NORTHWESTERN STEEL & IRON WORKS, 35 S. Dearborn St., Chicago. Manufacturers of National Pressure Cookers. They save time and money and are endorsed by leading domestic science experts.

NORTH SIDE REALTY COMPANY, 77 West Washington St., Chicago, Dempster Golf Course. Subdivision, Niles Center.

ORANGE CRUSH BOTTLING COMPANY, 4900 West Flournoy St., Chicago. Manufacturing Orange Crush, a fruit flavored carbonated beverage.

THE ORIGINAL ARCHAMBAULT CLEANING & DYEING Co., 1555-2254-3513 West Madison St., Chicago, a method of French cleaning includes sterilization of garments which resists bacteria and promotes health. The health of civilized nations depends upon intelligent use of its advantages.

PELOUZE MANUFACTURING Co., 232 East Ohio Street, Chicago, Illinois. Manufacturers of Infant, Dietetic, Photographic, Household, Postal and Dairy Scales.

PREMIER SERVICE COMPANY, 4406 Broadway, Chicago. Manufacturers of Premier Duplex Vacuum Cleaners. Branches and service stations in principal cities. Cleans floors and rugs for baby's sake.

THE SANITARY DISTRICT OF CHICAGO, Working exhibit of sewage disposal plants in operation. General exhibit of the Sanitary District's activities. Rest Room.

SCHOENHOFEN COMPANY, Manufacturers of Edelweiss Light and Dark Beer (non-alcoholic), Edelweiss Tonic and Green River.

SCHOENHOFEN COMPANY, Chicago. Manufacturers of Green River, the Snappy Lime Drink; Edelweiss Ginger Ale; Edelweiss Cereal Beverage; Edelweiss Lemon, Orange, Cherry and other fruit sodas.

SCHUTTER-JOHNSON CANDY COMPANY, 20 N. Jefferson St., Chicago. Old Nick Candy, a chocolate milk nut candy bar. Mothers and fathers, boys and girls, showed their appreciation of the quality of Schutter's Old Nick candy at the National Baby Congress and Health Exposition by pronouncing Old Nick "for a nickel," the most delicious chocolate nut caramel candy they had ever tasted.

SECURITY ELECTRIC MANUFACTURING COMPANY, 2635 Canton St. Among the exhibitors at the National Baby Congress and Health Exposition was the Security Electric Mfg. Co., manufacturers of Security Electric Heating Pads.

SETHNESS COMPANY, 659 Hibbie St., Chicago. Manufacturers of "Drinkmor," the appetizing hunger and thirst satisfying Dairy Drink. A scientific, dietetic preparation combining whole pasteurized milk, granulated cane sugar, pure barley malt and chocolate.

DRINKMOR MALTED CHOCOLATE MILK. The appetizing hunger and thirst dairy drink.

JOHN M. SMYTH COMPANY, 701 West Madison St., Chicago, dealer in furniture, household furniture, etc.

STANDARD CAP & SEAL CORP., 1200 Fullerton Ave., Chicago. Our Hood Seals protect your milk and cream from flies, fingers, dirt and germs. Hood Sealed Milk is cleaner, richer, sweeter milk.

CHAS. A. STEVENS, 19 N. State St., Chicago. Breeder of Fine Toggenburg Milk Goats, Exhibiting for Brook Hill Farm, producers of Brook Hill Certified Milk. Did you see the goats at the National Baby Congress? Would you like a catalogue of goats for sale? If so, address Chas. A. Stevens, 4704 Kenwood Avenue, Chicago.

STOVER Co., 445 E. Erie St., Chicago. Distributors of "Frigidaire" electric refrigeration.

SUNKIST PIE COMPANY, 2735 Indiana Avenue, Chicago. Manufacturers of pie crust.

TINY TOTTER COMPANY, Penn Ave. and B. & O. Railroad, Dayton, Ohio. Dealer in children's toys. Makers of Tiny Toter for Tiny Tots, Tiny Walker, Tiny Doll Sulky.

UHLEMAN OPTICAL COMPANY, Mallers Bldg., Chicago. Dealer in optical supplies.

SIDNEY WANZER & SONS, 21 E. 30th St., Chicago. Chicago Pioneer Purveyors of Dairy Products—established 1857. Milk from inspected herds on carefully selected farms.

WIELAND DAIRY Co., 3642 Broadway, Chicago. Distributors of Milk, Cream, Butter, Eggs and Cottage Cheese. From country to you in glass. For health's sake, use Wieland's.

WILLIAM WRIGLEY COMPANY, 400 N. Michigan Ave., Chicago. Dealer in chewing gum.

ZION INSTITUTIONS & INDUSTRIES, Zion, Illinois.

PRIZES AWARDED AT THE NATIONAL BABY CONGRESS AND HEALTH EX- POSITION, CHICAGO, MAY 2-10, '25, UNDER THE SUPERVISION OF THE ILLINOIS STATE MED- ICAL SOCIETY

GRAND AWARD

Five hundred dollars to the highest scoring boy or girl between the ages of 1 and 6 years. This amount is now on deposit in the Boulevard

Bridge Bank, contributed by the Chicago Portrait Photo Association.

Silver cup presented to the mother of the highest scoring child. Contributed by the Chicago Herald Examiner.

Three silver cups to highest scoring boy under 1 year—highest scoring girl under 1 year—highest scoring pair of twins. Contributed by Nestle Food Company, New York, N. Y.

Two Hundred dollar Add-A-Pearl necklace to the highest scoring girl in the Healthy Youth Contest (between the ages of 6 and 18 years). Contributed by the Add-A-Pearl Company.

White gold watch, 19 jewel, to the highest scoring boy in the Healthy Youth Contest (between the ages of 6 and 18 years). Contributed by the Illinois State Medical Society.

Northwestern Railroad and Pullman tickets to and from Eagle River, Wisconsin (summer resort) to the highest scoring woman in the Adult Health Contest (over 18 years of age). Contributed by the Illinois State Medical Society.

Northwestern Railroad and Pullman ticket to and from Eagle River, Wisconsin (summer resort), to the highest scoring man in the Adult Health Contest (over 18 years of age). Contributed by the Illinois State Medical Society.

Five hundred dollars equity in a lot located in Evanston subdivision to the highest scoring woman in the Adult Health Contest, open to all over 18 years of age. Contributed by the North Shore Realty Company.

DIVISION AWARDS

Division 1, children 6 to 12 months of age—	
Highest scoring boy	\$25.00
Highest scoring girl	25.00
Division 2, children 12 to 36 months of age—	
Highest scoring boy	\$25.00
Highest scoring girl	25.00
Division 3, children 36 to 72 months of age—	
Highest scoring boy	\$25.00
Highest scoring girl	25.00

Division 4, twins 6 to 72 months of age—

Highest scoring pair	\$25.00
2nd highest scoring pair	15.00

Division 5, triplets 6 to 72 months of age—

Highest scoring set	\$25.00
2nd highest scoring set	15.00

Division 6, colored children 6 to 72 months of age—

Highest scoring boy	\$25.00
Highest scoring girl	25.00

SPECIAL AWARDS

The following banks gave \$25.00 savings account for the highest scoring children in their respective neighborhoods:

Ashland State Bank.
Boulevard Bridge Bank.
Bowmanville National Bank.
Bankers State Bank.
Capitol State Savings Bank.
Citizens State Bank of Chicago.
Fidelity Trust & Savings Bank.
Garfield Park State Savings Bank.
Inland Trust and Savings Bank.
Logan Square State & Savings Bank.
Madison & Kedzie State Bank.
Phillips State Bank.
Roosevelt State Bank.
Second Security Bank of Chicago.
State Bank & Trust Company.
Suburban Trust & Savings Bank.
Washington Park National Bank.
West Side Trust and Savings Bank.
Liberty Trust & Savings Bank.

STATUS OF DATA BY COMMITTEE OF THE MEDICAL HISTORY OF ILLINOIS

DATA PROCURED FOR THE MEDICAL HISTORY
COMMITTEE TO JUNE 3, 1925

The Chicago Historical Society Library contains histories of the counties covering a period of about thirty years. from 1850 to about 1880, but very little after that.

Fifty-two (52) counties have been covered:

Adams	Lake
Alexander	LaSalle
Bond	Lee
Boone	Livingston
Brown	Logan
Bureau	Marshall
Carroll	Mason
Champaign	McDonough
Christian	McHenry
Clark	McLean
Coles	Menard
Cook	Mercer

Crawford
Cumberland
DeWitt
Douglas
Fulton
Hancock
Henderson
Iroquois
Jackson
Jasper
Jefferson
Jo Daviess
Kane
Knox

Montgomery
Morgan
Ogle
Peoria
Piatt
Schuyler
Scott
Vermillion
Warren
Woodford
Kendall
Sangamon
Stephenson
Whiteside

Fifty (50) remain to be done:

Calhoun
Cass
Clay
Clinton
DeKalb
DuPage
Edgar
Edwards
Effingham
Fayette
Ford
Franklin
Gallatin
Greene
Grundy
Hamilton
Hardin
Henry
Jersey
Johnson
Kankakee
Lawrence
Macon
Macoupin
Madison

Marion
Massac
Monroe
Moultrie
Perry
Pope
Pulaski
Putnam
Pike
Randolph
Richland
Rock Island
Saline
Shelby
Stark
St. Clair
Tazewell
Union
Wabash
Washington
Wayne
White
Will
Williamson
Winnebago

The Chicago Historical Society Library has nothing on the following counties:

Ford
Franklin
Gallatin
Hamilton

Kankakee
Saline
Tazewell

The Chicago Historical Society Library has very little on the following counties:

Carroll
Calhoun
Edgar
Effingham
Fayette
Hardin
Johnson
Lawrence
Mercer
Monroe

Moultrie
Peoria
Perry
Pulaski
Richland
Schuyler
Union
Warren
Washington
White

There is nothing in this library on the following counties up to 1850:

Ford
Franklin
Gallatin
Hamilton
Kankakee

Saline
Tazewell
Calhoun
Johnson

There was an insufficient amount of material at this library on the following counties:

Boone
Carroll
Clark
Crawford
Cumberland
Kane
Marshall
McDonough

McHenry
McLean
Ogle
Sangamon
Schuyler
Perry
Stephenson
Whiteside

Much collateral data has been collected by the Committee. Much remains to be dug out and classified. Every one should help to make this valuable history as accurate and complete as possible. *Doctor, look over your old county records and send on the data pertaining to pioneer medicine in the Illinois country.*

SUBSCRIBE TO THE LAY EDUCATIONAL FUND

IF THIS CONSTRUCTIVE WORK IS TO CONTINUE FUNDS MUST BE PROVIDED

The fund subscribed a year and a half ago by a comparatively few doctors, for the purpose of inaugurating the Lay Educational Bureau of the Illinois State Medical Society, is exhausted. Not one penny of the original fund was in-judiciously spent. Results far-reaching in importance to the medical profession have thus far been accomplished by the Lay Educational Committee.

If the valuable work is to continue, additional money must be forthcoming. An appeal for subscriptions for this worth while enterprise was mailed to members of the profession a few weeks ago.

The lay education campaign cannot be prosecuted without funds; it must be supported by popular subscription. It is hoped that every doctor will subscribe to this worthy cause. Serious disease diverted from the incompetent will result in the saving of thousands of lives and will prevent much permanent invalidism.

This campaign will achieve two great objectives. A gradual, but ultimate restoration of the medical profession to its merited place in the public sympathy and confidence and the inestimable benefits to humanity through the consequent prevention of disease and the preservation of life.

For the convenience of those who have mislaid their letter of appeal from the State Society, we hereby reproduce the pledge card:

Please sign and mail to the Illinois State Medical Society.

To the Officers of the Illinois State Medical Society and Members of the Council:

"I am in accord with the educational campaign, unanimously adopted by the House of Delegates of the Illinois State Society at the 1922 meeting and the plan recommended by the Council of the Society, and as evidence of my desire to cooperate with the officers of the council and of the State Society, I hereby enclose my check for \$..... to aid in defraying the expenses thereof:

MAKE CHECKS PAYABLE TO THE ILLINOIS STATE MEDICAL SOCIETY

Name M. D.
 Street
 City County

Sign the above pledge card, make out a check payable to the Illinois State Medical Society and mail both in an envelope addressed as follows:

From

.....

ILLINOIS STATE MEDICAL SOCIETY,

c/o Cashier, Sheridan Trust and Savings Bank,
 4738 Broadway, Chicago, Ill.

Below is a list of subscribers from Chicago and Cook County to the Lay Educational Fund as per letter sent physicians early in April soliciting funds and cooperation.

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Correspondence

ILLINOIS MEDICAL LEGISLATION

During the recent journey of the Chiropractic bill through the Legislature many interesting sidelights were brought out which we believe the Society will be glad to hear about. Consider an intelligent attorney writing such a letter as is herewith published, advocating something with which he is absolutely unfamiliar. At the same time note the open frankness of Rep. Benj. M. Mitchell, of Chicago, in declining to vote for the bill:

Law Offices, Frank J. Tyrrell.

160 North La Salle Street.

May 12, 1925.

Hon. Benj. M. Mitchell,
 House of Representatives,
 Springfield, Illinois.

Dear Sir:

I am very much interested in the success of House Bill No. 352, which provides for a Board of Chiropractors to conduct examinations and regulation of Chiropractors. This is no more than such trades as barbers, plumbers, etc., have and Chiropractors are certainly entitled to that, and public protection demands that the Examiner knows the subject and only Chiropractors know Chiropractic.

With five members of my immediate family Chiropractic has resulted in cures effected after medicine failed, which accounts for my concern.

If you are familiar with Chiropractic, you are for this bill; if you are not, kindly familiarize yourself rather than vote against it uninformed, for I would deeply regret ever having

to apologize for your casting of an unintelligent vote.

Most sincerely,

FRANK J. TYRRELL.

May 13, 1925.

Frank J. Tyrrell,
 Chicago, Illinois.

My Dear Sir:

Acknowledging your favor of the 12th inst. replying thereto I wish to state that I regret to be compelled to advise you I cannot comply with your wishes in reference to House Bill No. 52. I have always favored the recommendations of the Chicago and Illinois Medical Association, which is comprised of all licensed physicians and surgeons of the State in matters effecting proposed medical legislation. As they are opposed to this bill, I have taken a position in opposition.

I shall vote against this legislation. Sorry I cannot comply with your wishes.

Yours very truly,

(Signed)

BENJ. M. MITCHELL.

Benj. M. Mitchell,
 House of Representatives,
 Springfield, Ill.

Dear Sir:

Yours of the 13th instant in reply to mine of the 12th received and contents noted, which were a surprise to me, because of my request that you familiarize yourself with the bill having to do with Chiropractic, in so far as you state: "I have always favored the recommendations of the Chicago and the Illinois Medical Association, which is comprised of all licensed physicians and

surgeons of the state in matters effecting proposed medical legislation."

Chiropractic has nothing whatsoever to do with medicine or surgery and the members of the so-called medical profession know nothing at all about Chiropractic, and if they did they would be practicing Chiropractic rather than guessing with medicine and knives. It is for that reason that examiners of Chiropractors should be Chiropractors and not medical men.

Perhaps if you had had the experience I have had behind a prescription counter and the study of medicine you would, as I do, see what a farce medicine and surgery are.

I have my own ideas, having been present in Springfield when the Medical Association lobbyists were there and saw them work, as to the reasons for your change of attitude or forgetfulness of your statement to me during the Fifty-third General Assembly that you would favor the then presented Chiropractic Bill, although I am frank to admit I never did know whether you were for or against it at that time.

I regret to learn that without knowledge of the subject before you, you favor the representations of a medical or any other association, which has a selfish motive in opposing certain pending bills.

I appreciate your frankness, although doubt your motive, and sincerely hope that if your conscience is your guide in this matter as far as your vote is concerned that you do not continue to persuade others to vote against a matter which your own communications indicate you know nothing about, and which I am informed you are doing.

Very truly yours,

FRANK J. TYRRELL.

Mr. Frank J. Tyrrell,
Chicago, Illinois.

Dear Sir:

Acknowledging your favor of the 19th inst., replying thereto I wish to state that indeed I cannot understand why you were surprised because of my attitude in reference to the Chiropractor's proposed law.

In my judgment the Chiropractic Bill is intended for one purpose, that of lowering requirements so that many incompetents with very little, if any, professional training, may become licensed to treat the sick in Illinois. Imagine a

Chiropractor manipulating the spine for diphtheria, scarlet fever, appendicitis and one thousand and one other dangerous ailments until the patient has passed the curable stage.

You also state that Chiropractic has nothing to do with medicine and surgery, still they are seeking a license to practice the treatment of human ailments.

You also refer to the guess work of the medical profession. If the medical man must resort to guess after five years of preliminary education and training, how about the Chiropractor with only a few months study?

Up to the present time I have met no lobbyists for the Medical Association. I have never changed my attitude, nor is there any forgetfulness of any statement I made to you during the Fifty-third General Assembly that I would favor the Chiropractic Bill. Every one who knows me in Springfield knows that I have never favored the Chiropractic Bill.

While my knowledge may be limited on the subject of Chiropractors, I am positive and firm in my confidence in the medical men of Illinois. You are at liberty to doubt my motives if you wish, and am sure that my conscience is my guide in this as in all other matters of the State.

Regretting that you are disappointed in my attitude, and assuring you that the motive that guides is my public duty to do what I think is the right thing for the people of Illinois. I have unbounded confidence in the members of the medical profession who are organized as the Chicago and Illinois Medical Societies, and will continue to follow their recommendations in reference to proposed laws effecting medicine and surgery in our State.

Yours very truly,

BENJ. M. MITCHELL.

RESOLUTION ON THE DEATH OF DOCTOR M. P. PARRISH

WHEREAS, in the furtherance of His all wise plan, our God has raised our friend and colleague, Dr. M. P. Parrish, to the higher service of his own purpose, and

WHEREAS, though we bow with reverence to the will of our Creator, we are deeply conscious of a loss which earth cannot regain, therefore,

Be It Resolved, that the minutes of the Coun-

cil of the Illinois State Medical Society contain this record, our memorial tribute to an esteemed friend and coworker, Dr. M. P. Parrish, Councilor for the Seventh District, who died on May 28, 1925.

Be It Further Resolved, that a copy of this appreciation of our loss be sent, in a spirit of mutual bereavement and sympathy, to the family, and that it appear in the columns of the ILLINOIS MEDICAL JOURNAL.

H. M. CAMP.
G. B. DUDLEY.
S. E. MUNSON,
Committee.

NOTED CHEMISTS WILL GIVE AID TO HOOVER

COMMITTEE NAMED TO HELP MAP PROGRAM FOR BENEFIT OF INDUSTRY

The appointment of an advisory committee composed of outstanding members of the chemical industry to cooperate with the Department of Commerce has been announced by Secretary Hoover.

The purpose of this committee is to assist the chemical division of the department in mapping out a program of work which will be of the most practical and immediate benefit to the industry.

The membership of the committee, as announced by Secretary Hoover, includes Dr. Leo Bakeland, president, American Chemical Society and inventor of bakelite; Dr. A. S. Burdick, president of the Abbott Laboratories of Chicago and formerly president of the American Drug Manufacturers' Association; Dr. H. E. Howe, editor of the Journal of Industrial and Engineering Chemistry; Dr. Charles H. Herty, president of the Synthetic Organic Chemical Manufacturers' Association; Henry Howard, chairman of the board of governors of the Manufacturing Chemists' Association; G. Ober, president of G. Ober & Sons, Baltimore, and past president of the National Fertilizer Association; E. G. Trigg, president of John Lucas & Co., Philadelphia, and president of the Agricultural Insecticide and Fungicide Association; A. Cressy Morrison, president of the Acetylene Gas Manufacturers' Association, and S. W. Wilder, secretary of the Manufacturing Chemists' Association.

ZINC STEARATE DUSTING POWDERS FOR INFANTS

The second report of the Committee on Accidents from Zinc Stearate Dusting Powders appointed by the Board of Trustees of the American Medical Association has recently been published. Copies of this report, with an appendix showing the opinions of thirty-four representative pediatricians on the therapeutic value of such powders, can be obtained on request. Address, Committee on Zinc Stearate Dusting Powders, American Medical Association, 535 North Dearborn

Street, Chicago, Illinois, enclosing a self addressed, stamped envelope.

There were reported to the committee 131 accidents from the inspiration of zinc stearate dusting powders by infants. Twenty-eight of the victims died. The committee conferred with representatives of certain distributors concerning the dangers incident to the use of such powders on infants. Following a meeting held at the headquarters of the American Medical Association, these distributors agreed to cooperate by adopting self-closing containers for the powders they distribute and agreed that cautionary labels are desirable. Opinions were secured from thirty-four representative pediatricians concerning the therapeutic value of zinc stearate dusting powders. Thirty-one believe that such powders have no advantage over other dusting powders, that they constitute a hazard to infant life and that their use should be discouraged.

THE CURE

BY WALT MASON

When I was well I used to say, "I'm getting better every day, more buoyantly;" I felt improvement as I spied, imaginary ills were healed, and phantom ailments fled. And so I said to all my friends, "Here's where the doc's profession ends, the pillsmith's trade is gone; henceforth suggestion will avail where saws don't help and capsules fail, and you may bank thereon." But recently I caught the flu, and when the blamed attack was new, I said to neighbors five, "Now watch me cure this dread disease; I'll spring my 'getting better' wheeze; before it ills can't thrive." I murmured, as I went my way, "I'm getting better every day, I don't need doc or nurse," and thus I tried to kill the flu, and kept on trying when I knew that I was getting worse. My neighbors five stood in a group, and watched the cough and sneeze and whoop, and they were greatly pleased; for they had argued, with much steam, that faith in such a dippy scheme betrayed a mind diseased. I do not say that they were right, but I am taking pills tonight, and dope, and boneset tea; and Old Ooc Casket just has said, "You wait until you're nearly dead before you send for me. I am disgusted with you lads who take up modern cure-all fads as soon as they begin; you fool with them, and fool with fate, and when Grim Death is at the gate, you call the doctor in."

WHY DOCTORS DIE YOUNG

It is two o'clock in the morning. Dr. Blank has just returned from a case which he has been working on since seven. Just as he gets into a sound sleep, the telephone rings. He wakes with a start, rubs his eyes and mechanically leans over and takes the phone.

"Is this Dr. Blank?"

"Yes."

"Doctor, could you tell me a word of eight letters, the third letter of which is 'l' and the fifth 'd', the word meaning a disease prevalent among the house mice of Zanzibar?"—B. B., in *Life*.

Original Articles

PHYSICAL FACTORS IN THE PRODUCTION OF APPENDICITIS. POINTS IN DIAGNOSIS. THEIR INFLUENCE ON SURGICAL TREATMENT.*

SIR HENRY GRAY, LL.D., M.B.,
ABERDEEN, F.R.C.S., EDINBURGH,
Surgeon in Chief, Royal Victoria Hospital.
MONTREAL, CANADA

It is my very strong belief that at least 75 per cent. of cases of inflammation of the appendix, whether acute or chronic, are due to anatomical conditions which result from excess or failure of what I have previously called "developmental or physiological fusion" of the viscera in its neighborhood. It would be a matter of great interest to find out what is regarded by observant surgeons of experience as the normal intimate arrangement of parts in the right lower quadrant of the abdomen. In order to elaborate my own point of view, I wish you to hark back to student days. Embryology shows us that the proximal end of the colon appears first as a bulging of the then comparatively straight alimentary tube and thereafter it migrates, by a circuitous route, across the upper part and down the right flank of the abdomen, to take up its position in the right iliac fossa, where this part of the large bowel usually becomes sessile, except actually the blind end itself which remains free.

In a large percentage of people the cecum and ascending colon are much more mobile than the descriptions of older authorities would have us believe. This mobility varies within wide limits. The undue mobility predisposes to stagnation of the contents of the bowel, and, in my opinion, the consequent mechanical, chemical and reflex acts of this stagnation are the cause of the majority of the ailments for which the surgeon opens the abdomen. Increasing experience serves to strengthen this opinion.

Developmental adhesions or membranes are associated with this condition and very frequently involve the appendix itself or its surroundings. They occur in extraordinary variety.

The appendix varies greatly in the position which it takes up in the abdomen. While it very frequently occupies the position ordinarily

ascribed to it in relation to the cecum under McBurney's point, yet it may be tucked away under the lower part of the mesentery, or behind the ascending colon or up under the liver. Indeed it may occupy almost any part of the abdomen.

In order to understand these vagaries in attachment and in situation one has to study more closely the developmental changes which may occur. When one understands these fully, one is not surprised at these variations.

Although, owing to arrest of migration of the colon, the appendix may be found in unusual situations, it is not more subject to inflammation on that account. In face, it appears that—if the cecum and therefore the *base* of the appendix has reached what is regarded as its normal anatomical position—the appendix as a whole is more likely to be inflamed because of the capricious way in which other anatomical considerations assert themselves. The high position of a cecum which has not descended to the iliac fossa probably facilitates emptying and thus tends to prevent stagnation in and consequent distension of this part of the bowel.

Our artificial modern life at high pressure, our irregular habits, our food stuffs, our preparation of them, our hurried meals, our want of attention to regular evacuations of the rectum, our frequent resort to aperients, and many other factors—all have their effect on the large bowel, in a manner which I have frequently attempted to explain. Sir Arbuthnot Lane deserves enormous credit for drawing attention in such a clear and demanding manner to the disabilities resultant on stagnation. He has provoked much adverse criticism but his writings on the subject will remain classical. One differs from Lane in opinion as to the cause of adhesions and membranes found in the abdominal cavity in association with intestinal stasis. I believe that these adhesions and membranes, which are developmental in origin, are the *cause*, not the *result*, of the stagnation. I do not wish to enlarge further at this time on the subject except to consider it in connection with appendicitis and some of its accompaniments and in connection with the surgical treatment of these conditions.

The ordinary well-behaved appendix, which gives trouble to nobody, arrives in due course in the anatomical position and has the anatomical attributes usually ascribed to it in standard books of anatomy. The first part of the colon behaves

*Read before the Inter-State Post Graduate Assembly of America, Milwaukee, Wis., Oct. 27-31, 1924.

in the same way. There are no disabling abnormal displacements, adhesions, or deformities found, and the individual possessed of such ideal conditions probably leads a life of freedom from abdominal pains or discomforts, his appetite is good, his bowels and other organs function well. Happy man, he has only himself to blame if he gets a headache! He may indulge with impunity in irregular behavior which his less fortunate brother is punished for, almost without fail. The man with abnormalities of his appendix and colon suffers if he commits indiscretions in diet, becomes irregular in habits, overworks, over-slacks, or, in fact, if he does not truly lead a godly, righteous and sober life in every respect.

As has been pointed out by many surgeons, the person with abnormalities of appendix and adjacent colon has usually abnormalities affecting other abdominal organs. The effect of the abnormalities in the appendix and these other organs is felt throughout the body. I would point out that many surgeons have come to regard a mobile cecum and ascending colon as being the normal *accompaniment* of abnormal abdominal conditions for which they have to operate. I believe that this condition of the cecum and ascending colon, plus the abnormal developmental adhesions which accompany it, are *responsible* for, amongst other troubles, the great majority of cases of appendicitis, both acute and chronic. We can now examine my reasons for saying so.

According to anatomists, the appendix is found usually in one of three places.

1. At the lower, inner, and possibly slightly posterior part of the caput cecum coli, when it floats free in the abdominal cavity and is usually unaffected by adhesions. In virtue of its mobility its motility is unimpaired.

2. At the inner aspect of the caput cecum, attached more or less directly to the under surface of the mesentery (sub-mesenteric appendix).

3. Lying on the posterior and usually outer part of the caput cecum and ascending colon.

Appendices in the positions (2) and (3), i. e., submesenteric and retrocecal, are most frequently affected by inflammation, but, case for case, an appendix in position (1), when affected by inflammation, is the most dangerous of the three. A retrocecal or retrocolic appendix, when inflamed, is either already shut off by adhesions from the general peritoneal cavity or tends

rapidly to become so. It is least likely to cause spreading peritonitis. Localised retrocolic abscess is a more likely result if the attack proves resistant to early treatment by rest in bed and enemata. It is less likely to produce tragedy if aperients are given by mouth. At the same time a neglected or improperly treated case of this sort with well established abscess is likely to take longer to heal because the retroperitoneal tissue becomes involved. It is thoroughly recognized that, compared with other tissues, the peritoneum can deal better with infection than they can, provided it gets a reasonable chance.

At this point we might discuss the question, "Why are enemata preferable to aperients in cases of appendicitis, and why does their early use sometimes cut short an attack?" The answer is, to my mind, simple.

1. My thesis is that a dilated loose cecum and colon are very frequently the cause of appendicitis, because in association with these are developmental adhesions which often limit the mobility of the appendix.

2. When any part of the bowel becomes affected by inflammation, either directly or indirectly or by contiguity, its activities usually tend to cease and the affected part becomes unduly dilated. If then we give an enema early, before inflammation of the appendix has progressed so much as to cause paresis or even paralysis of the bowel, the colon is emptied, tension of the bowel wall at the inflamed part lessens, the cause of excessive strain on the appendix is removed and the circulation is allowed to proceed more normally. Venous engorgement especially is relieved. Thus the attack gets a chance to subside. I need not draw a picture of the reverse conditions brought on by the use of aperients, which crowd down more material into the already overloaded or overdistended part. This explanation is not depreciated by the knowledge that in some dangerous cases, occurring especially in children, the irritation caused by the attack leads to more or less pronounced diarrhea. In the ordinary case constipation is the rule.

I place appendices in position (2), sub-mesenteric, as intermediate in causing imminent danger if delay in treatment is permitted. In this situation the appendix is usually covered fairly well by the lower end of the ileum and its mesentery, and, in case of inflammatory disturbance, that policeman of the abdomen, the great

omentum, can usually reach the scene fairly easily and exert custody over the delinquent. The coils of small bowel clustered in the pelvis also lend their aid. All these structures become glued together and combine in forming an abscess wall, or, at least, an obstruction to the spread of inflammation. The appendix is, in such cases, very frequently somewhere near the posterior abdominal wall or side of the pelvis and therefore one large part of the abscess wall is thoroughly reliable in preventing peritoneal spread. But, if aperients are given by mouth or if strain is put on the abdominal contents by vomiting or by careless spontaneous exertion, the viscera forming the other parts of the abscess wall are apt to be torn asunder and leakage occurs, accompanied by rapid deterioration in the patient's condition.

I believe that this position of the appendix is, however, more likely to cause troublesome complications and sequelae of appendicitis. Intestinal obstruction is more likely to occur during the attack of appendicitis owing to kinking of adherent loops of bowel, and the attack is more likely to be *followed* by such obstruction, owing to formation of bands when the adherent loops draw apart after convalescence is established. If, as usually happens, drainage by tube is used, drainage has usually to be kept up for a longer period because there are frequently recesses between the coils of bowel which may not drain well. Fecal fistula is apt to occur more readily, especially if the appendix is removed through a small incision. The bowel wall is in danger of being torn during the separation of the appendix especially when attempted through a grid-iron incision. A rubber tube is apt to complete the destruction of the injured bowel. I have had to deal with five such fistulae after use of rubber tubes since my arrival on this side of the Atlantic. Other complications of the submesenteric appendix are the occurrence of severe hemorrhage from ulceration of the iliac vessels and pyemia due to infection of the veins. We must remember that, in its submesenteric position, the appendix lies across these veins at the brim of the pelvis.

You will appreciate that I have very little use for tube drainage as ordinarily used in the abdomen and equally little use for a gridiron incision.

While an appendix in position No. (1) is least predisposed to inflammatory attacks, yet it

places the patient immediately in greatest jeopardy when it becomes inflamed. In this position the appendix is most mobile, it usually lies free amongst the coils of the bowel, and is often in contact with the anterior abdominal wall. Although the omentum frequently does its best to enshroud the offending member—we find the appendix very frequently surrounded by it—yet the defense is not reliable; under strain leakage is likely to occur. Owing to their position the glued-together parts are liable to become torn asunder by the strain of movement, whether this movement takes place in bowel or abdominal wall. A short meso-appendix in this type has, I believe, considerable importance as a physical factor in the production and spread of inflammation.

Why is it that the appendix comes to assume these varied positions and why should distension of the colon affect it in a deleterious way? That is very simply shown.

When, during development, the cecum “hesitates” under cover of the liver before descending to the right iliac fossa, it contracts adhesions there, or rather the omentum, which is attached to it, does. I shall demonstrate this in my afternoon lecture. These adhesions are drawn out, as the cecum descends, into the thin filmy structure known as Jackson's membrane or veil. If the appendix projects, from the cecum, horizontally under the liver, it is apt to be implicated in the subhepatic adhesions which then retard its descent to a greater or lesser degree. The more powerful or heavier part of the bowel, headed by the cecum, pushes on and usually reaches the iliac fossa. The appendix then is found to be hung up by adhesions which usually also plaster it on to the posterior or outer aspect of the cecum and ascending colon, although sometimes, but rarely, it is quite free itself while the attachments of the meso-appendix hold it in the retrocolic position. The adhesions which fix it in this position are readily seen to be part of Jackson's membrane.

When the “cecum” hesitates unduly long in the subhepatic region, the lower end of the ileum takes the place in the loin which the ascending colon normally occupies. The ileum and its mesentery become more or less adherent to the peritoneum lining the posterior abdominal wall just as, normally, the ascending colon and its meso-colon do. The appendix may project down-

wards from the cecum and become implicated in the adhesions which bind down the ileum. If now, the cecum changes its mind, so to speak, and proceeds towards its rightful place in the iliac fossa, the interloping ileum has to be pushed out of the way. It shows its objection, however, to move, in that it hangs on more or less successfully by the adhesions just described. These usually become absorbed to a large extent but the remnants persist as Lane's terminal ileal membrane. This may be a well-formed triangular or quadrilateral sheet of membrane but is more frequently of a patchy description. When it contracts adhesions with this membrane in the upper part of the abdomen the appendix is dragged down with it, and is finally fixed by it either directly to the under surface of the mesentery or else by its meso-appendix. Lane calls this a "controlling appendix!"

Needless to say that although there may be a very well marked Lane's membrane, the appendix may be as far away therefrom as its other attachments permit, i. e., it may remain in a retrocolic position.

From what I have said you will appreciate the variety of positions in which the appendix may be found and the variety of membranes or developmental adhesions which may exist in the right side of the abdomen and affect it.

Can we diagnose the position of the appendix and the presence of these membranes before we open the abdomen? I think we can and I asked your Director of Clinics that some cases of so-called chronic appendicitis be selected so that I might demonstrate the methods of diagnosis.

In passing I would draw attention to the number of cases diagnosed as chronic appendicitis and in which removal of the appendix does not cure the trouble complained of by the patient. This is really because the recurring pains in the appendix region are the result of other conditions, which require more extensive interference than mere appendectomy. How often are surgeons faced in such cases with an appendix which requires a big stretch of imagination to describe as really abnormal. They frequently content themselves with the assumption that "really no appendix is normal"—so out it comes. Frequently the manipulations and exposure of the cecum cause its peritoneum to become inflamed (not septic) and adhesions of the cecum form and prevent it sagging. But in the course

of a few weeks these adhesions become absorbed again and the patient gradually acquires his old symptoms, even in aggravated form. Very frequently, as I shall refer to later in the day, I have completely and permanently cured such cases by the operation of colopexy.

As I shall show you now in these patients there are signs which, if well marked, make the pre-operative diagnosis of chronic appendicitis and certain abnormalities, which accompany or cause it, practically certain.

What one ordinarily finds on palpation, in cases of chronic appendicitis, is tenderness on pressure over McBurney's point. This is usually present in all cases where the cecum has descended to its usual situation. In cases where the appendix occupies position (1) the tenderness is usually fairly well limited to that area.

If the appendix lies to the outer side or back of the cecum and colon, one can also elicit tenderness on deep pressure internal to and not far from the front part of the crest of the ileum and this tenderness may extend, in retrocolic appendix, in a line upwards towards the anterior part of the last rib.

In cases of submesenteric appendix the diagnosis is usually fairly easy. It is dependent on a symptom which was suggested by an observation made by Mr. J. W. Dowden of Edinburgh and was worked out by Mr. William Anderson, an old assistant of mine, and myself. My house surgeons call it "Gray's sign." The method of eliciting the sign will be shown in a lantern slide. If one presses with the point of a finger somewhere about $1\frac{1}{2}$ " below and to the left of the umbilicus one can frequently elicit tenderness there. Occasionally, at the tender spot, there seems to be a small aperture in the rectus sheath. It is possible that this tender spot corresponds to the point of emergence of the terminal branch of the 11th dorsal nerve. The amount of pressure required to produce the feeling of tenderness is estimated. The pressure is relaxed and then with the back of the hand diffuse pressure is made and sustained over the appendix region, which is usually also tender. Then the same amount of pressure is exerted at the same spot as before on the left side, with the point of a finger of the other hand. If the sign is positive the tenderness there is not now appreciated by the patient or is lessened considerably in degree. This sign, when positive, is evi-

dence of the presence of either a submesenteric appendix or a Lane's terminal ileal membrane. If the presence of a retrocecal or retrocolic appendix has been already established, then the sign indicates a Lane's membrane only.

This sign, in my experience, is one of the most reliable palpatory tests which has been applied in abdominal diagnosis. I have not yet been able to formulate any fitting explanation of the phenomenon.

I have found the presence of an *area of superficial hyper-esthesia* over the usual site of the appendix to be helpful in establishing a diagnosis of chronic appendicitis. I find that the hyper-esthetic area is most easily determined by stroking the skin in a vertical direction with the point of a pin. When examining an abdominal case in a systematic manner, I begin the stroking process well above the costal margin and draw the pin slowly downwards over different latitudes of the abdomen. The pin is held at an angle to the skin with the point directed to the patient's head. The pressure exerted must not be so great as to hurt the patient and care must be taken not to increase or diminish it during the downward stroke. If the costal margin is prominent, one is inclined to increase the pressure on the surface of the dip just below this margin and of course such a change in pressure may make the patient complain. The patient is directed to notify at once any change in sensation, where it begins and where it ends. A sharpness or roughness, sometimes amounting to actual pain, is felt over the area of hyper-esthesia. In the case of the appendix, the hyper-esthetic area is defined somewhere within a triangle whose base is in the midline and whose sides extend for a variable distance obliquely upwards towards, and possibly well on to, the right flank. The base of the triangle extends from about an inch below the umbilicus for two inches or thereby towards the pubes. It is not usual to find that the whole triangular area is involved. Usually only a patch of it is affected, most usually over the normal site of the appendix. The appendix area must be differentiated from the hyper-esthetic area of the gall bladder above and that of the uterine adnexa below. These occur in approximately the same vertical line as the usual patch of appendicular hyper-aesthesia but in ordinary cases are separated therefrom by a band of normal cutaneous sensation.

This area of cutaneous hyper-esthesia may be found even although the appendix is abnormally situated. The nerve supply of the appendix and its connection with the spinal nerves are, no doubt, the same whatever be its location. The presence of an appendicular hyper-esthetic area may help in the differentiation of subhepatic inflammation caused by an undescended appendix.

If this sign is definitely present, I believe it to be of value. Its absence does not negative the presence of inflammation of the appendix. I have found it present after the appendix has been removed. In such cases I have found adhesions affecting the area which the appendix or its meso-appendix previously occupied.

Experts in *x-ray work* can make out the appendix, if the material used for obtaining the shadow gains access to the organ. Situation, fixity, deformity, etc., can often be decided by viewing the cecal region from different angles and at the same time displacing the cecum in different directions. The presence of constrictions or angulating adhesions can sometimes be distinguished.

I have drawn attention to the fact that frequently the removal of the appendix in cases diagnosed as suffering from chronic appendicitis does not permanently cure the symptoms of which the patient complains. In such cases I believe that the discomfort, dragging pains and so on, complained of in the right side of the abdomen, are due to other conditions, and chiefly to the dragging, distension or pressure of a large and unduly mobile proximal colon, which exerts its evil influence in the various ways which I shall discuss in the afternoon. I shall then explain the reason why, for example, when I find "Gray's sign" present I become suspicious that such a state of colon is present. Except in fat people, one can usually make out its presence by palpation. The dilated, loose colon gurgles and rolls under the fingers. X-rays may help—but sometimes one x-ray examination, unless special care is taken, does not reveal the condition although it is there. I believe this is due to the fact that the colon is then in a state of activity, owing to mental excitement of the patient during the unusual experience. Those of us who have partaken in important competitive work or play may have experienced before-

hand the troublesome effects of such colonic activity!

Although, as I hope to show you later, one can diagnose before operation with fair certainty that this condition of the proximal colon is the most probable cause of the patient's complaints yet it is sometimes difficult to decide in suspicious borderland cases how far one should proceed at operation. When the appendix has been found to be very definitely affected and its removal constitutes the only operative procedure, I grant that the patient may be permanently cured, even though there may be "cecum mobile" present. In some of these cases the appendix may be the only part on which deleterious traction by the proximal colon has been exerted and in others the adhesions formed, as a result of the operative interference, may fix the affected part of the colon almost as well and permanently as a planned operation. For example, the removal of an adherent retrocolic appendix often entails extensive denudation and manipulation of the colon in its neighborhood. The resultant formation of fibrous tissue effects a colopexy!

But here is the difficulty: One knows that the symptoms due to mobile proximal colon may develop late in life just as much as one knows that mere removal of the appendix does not always cure symptoms already present. Therefore I am inclined to advise and to practice fixation of this part of the colon in cases in which definite dilatation and unnatural mobility are present, although such definite abnormality of the appendix is found as to justify the opinion that the patient's symptoms can be ascribed chiefly and solely to it. If, hypertrophy of the colon exists along with dilatation and mobility I do not hesitate. In all cases when symptoms of discomfort, pain and dragging in and above the region of the appendix have led to operation at which the appendix is found to be approximately normal, while the proximal colon is loose, hypertrophied and dilated, then colopexy should be done in addition to appendicectomy. It is only by following these indications that patients may be reasonably assured of being relieved without the necessity of a second operation. In order to be able to investigate and treat these abnormal conditions adequately, I maintain that a very full incision is necessary. I prefer a right paracentral incision, 6-8" in length, at least an inch from the middle line, and I displace the rectus out-

wards after detaching it carefully from the linea alba to which it is tacked again, at the end of the operation, by fine catgut. The posterior sheath of the rectus is divided in the same line as the anterior. I use the same incision in acute cases.

OBSTETRICS IN THE HOME*

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A study of the records of five hundred consecutive deliveries personally conducted in private homes will, I believe, furnish sufficient data to be of interest to both the specialist in obstetrics and to physicians in general practice. Many deliveries from either choice or necessity are conducted in private homes and, such being the case, we must accept the situation and be prepared to make the best of the surroundings.

The presentation of this study does not speak either for or against obstetrics in the home. Conditions under which the deliveries were carried out represent every grade of home from the meanest to the most pretentious.

The parents represent many nationalities; most every religious creed was encountered and numerous professions and trades were represented by the three hundred and forty-seven families.

Taking the results of this report as a whole, it is a presentation of facts as we find them in general practice in a large city with perhaps more than the usual number of operative measures on account of our willingness to attend difficult cases without hospital conveniences.

We have not considered abortion whether accidental, criminal or therapeutic if under six months' gestation.

TABLE 1. PRIMIPARAE

Between 15 and 20 years,	24 cases
Between 20 and 25 years,	62 cases
Between 25 and 30 years,	47 cases
Between 30 and 35 years,	14 cases
Between 35 and 40 years,	7 cases
Between 40 and 45 years,	1 case
Age not recorded.....	2 cases

Total157 cases

The youngest was 16 years old, the oldest 44 years of age.

Illegitimate children represent only one per cent. All five were female and each mother was a primipara.

*Read in abstract before Jackson Park Branch, Chicago Medical Society, Nov. 20, 1924.

TABLE 2. ILLEGITIMATE CHILDREN

Mother	Age	Para	Occupation	Father	Age	Occupation	Infant
	20	1	Maid		40	Laborer	Died third day (Mem. of new born)
	21	1	Seamstress	28	Bricklayer	Adopted	
	17	1	Home girl	20	Mechanic	Retained	
	16	1	Home girl	30	Street car conductor	Adopted	
	20	1	Waitress	27	Printer	Retained—died age 7 mos. Syphilitic	

Breech Deliveries—Breech presentations were twenty, or four percent, two of which were stillbirths, both mothers were invalids, and a third child died soon after birth. One was a badly deformed baby with hydrocephalus, spina bifida, clubbed arms and feet. The mother had epidemic meningitis with recovery just a year before this birth. Nine of the mothers were primiparae, and two of the babies were each one of twin deliveries.

Six of the babies were male and fourteen were female. Seven of the babies weighed six pounds or less. Four weighed ten or more pounds. Weight was not recorded in three of the cases.

In one case forceps were used on the after-coming head to complete the delivery.

TABLE 2-A. BREECH DELIVERIES, 20

Age	Para	Weight	Sex	Remarks
32	V	7 lb.	female	double footing
20	I	6 lb.	male	frank breech
27	I	6 lb.	female	frank breech, stillbirth
21	I	6¼ lb.	female	frank breech
30	III	10¼ lb.	female	frank breech
37	IV	9 lb.	female	frank breech, stillbirth
23	I	8¼ lb.	female	frank breech
28	I	.....	female	died in one hour
22	II	5½ lb.	female	died 5 days—deformities
34	IV	5½ lb.	female	a twin
26	III	.....	male	Sac R. Ant.
30	II	10 lb.	male	Sac R. Post
26	I	8½ lb.	male	
..	..	10 lb.	male	Consulation case—the physician thought the soft presenting parts to be placenta previa
19	I	6¼ lb.	male	Simpson forceps on after com- ing head
29	I	4½ lb.	female	a twin
20	I	.....	female	frank breech
29	II	6 lb.	female	
29	II	6 lb.	female	sac. left anterior
28	IV	10¼ lb.	female	arm in nape of neck—frac- tured humerus

Case No. 496, Para-IV, age 26: Female child, 10¼ pounds, with arm in nape of neck; baby sustained a fractured humerus during extraction.

Transverse presentations occurred twice.

Case 269. Age 29, Para-III. Right arm delivered, shoulder at outlet. Threatened rupture of uterus. Manipulations forced the head in position for the application of forceps. The delivery was successfully terminated for mother and child in spite of long delay in securing medical aid.

Case 275. Age 30, Para-II. Shoulder presenting. No fetal heart beats could be heard. Labor had been in progress several hours without medical attention.

Version and extraction of a dead female baby; 6½ mo. gestation.

Twin Deliveries—Twins numbered seven pairs, not including three pairs of twins under six months gestation delivered during the period of this statistical study.

TABLE 3

MOTHER		CHILD			
Case No.	Age	Para	Weight	Sex	Weight
17-18	22	I OLA	7¼	male	14 pounds
		OLA	6¾	male	
139-140	34	I Cephalic	4	female	10 pounds
		Cephalic	6	male	
178-179	25	I	5¼	female	10 pounds
			4¾	male	
209-210	34	IV OLA	6½	male	12 pounds
		Sac. Rt. A	5½	female	
253-254	30	III	7	female	14¼ pounds
			7¼	female	
368-369	29	I ORA	4¼	female	8¾ pounds
		Sac. Lt. A	4½	female	
489-490	26	VI OLA	6¾	female	12¾ pounds
		ORA	6	female	

Three pairs were female, three pairs male and female, and one pair male. Four of the mothers were primiparae, three multiparae. Only one gave history of twins in previous generation, that of case 368-369, where the mother's father was a twin. I have delivered babies for three sisters of this mother, none of whom had twins.

Low Forceps—Low forceps (Simpson's) were used only twelve times. Two of the mothers were para-II, ten were primiparae. In one case (366) a breech, the forceps were used to extract the after-coming head, all of the others were cephalic presentations.

Eight of the children were male and four were female.

The condition of mother and child following the deliveries was normal in each case.

TABLE 4. SIMPSON FORCEPS

Case	Age	Para	Weight	Sex
427	21	I	7½ lb.	female
483	24	I	6¼ lb.	female
432	30	I	7½ lb.	female
97	31	I	8 lb.	female
110	29	II	5½ lb.	male
442	23	II	6¾ lb.	male
218	21	I	9¼ lb.	male
497	21	I	7 lb.	male
222	23	I	7½ lb.	male
50	26	I	8¼ lb.	male
233	28	I	8¼ lb.	male
366	19	I	6¼ lb.	male breech

The indication of forceps in each case was absence of progress after head rested on the perineum until the mother showed exhaustion or the fetal heart tones became irregular.

The breech case No. 366. The head resisted all efforts at extraction, with the husband as anesthetist and assistant. Simpson forceps gave just the right pull for a successful delivery.

High Forceps—Tarnier axis traction forceps were applied on twenty-eight occasions for the following reasons:

Normal Pelves—Uterine Inertia (nine cases):

Case 1. Para-II, age 23 years, 18 hours' labor, com-

plete dilatation, no engagement, mother exhausted, fetal heart tones very rapid, chloroform anesthesia, delivered 6½-lb. female, normal puerperium. (We have since delivered a baby for this child.)

Case 77. Para-IX, age 42 years, cervix dilated, hard pains, poor contractions, no engagement, delivered 7½-lb. female, normal puerperium.

Case 125. Para-I, age 20 years, hard pains, no progress, exhaustion, delivered 7-lb. female, normal puerperium.

Case 145. Para-I, consultation case, mother's age and baby's weight were not obtained. Twenty hours labor, mother exhausted, no progress, fetal heart tones irregular, male child delivered, normal puerperium.

Case 149. Para-I, age 31, cervix dilated, bag of

water had ruptured, no engagement, mother exhausted, 6-lb. male, normal puerperium.

Case 271. Para-I, age 32, bag of water ruptured, hard pains, no progress, exhaustion, 7½-lb. male.

Case 331. Para-I, age 20, long hard labor, cervix dilated, partial engagement, exhausted mother, irregular fetal heart beats, 7-lb. male.

Case 422. Para-I, age 36. An anesthetic specialist gave gas oxygen with each pain for over twelve hours. Baby's heart beats became very irregular and faint, cervix dilatation was completed by hand, forceps applied and a 7¾-lb male delivered deeply asphyxiated, could not be revived.

Case 467. Para-I, age 31. Very fat, large varicose veins of both legs, severe frequent pains, head partially engaged, no progress after 18 hours' labor, exhaustion, fetal heart beats irregular, female baby delivered. Mother died on twelfth day. Pulmonary embolism. Child living and well.

Normal Pelves—Large babies (three cases):

Case 51. Para-I, age 27. Bag of water ruptured, cervix completely dilated, head not engaged, 8½-lb. male, good condition.

Case 71. Para-I, age 18. Labor for many hours, cervix dilated, no engagement, mother exhausted, fetal heart tones good, 8¾-lb. female. Normal puerperium.

Case 107. Para-I, age 20. Pains hard, cervix dilated, head engaged, no progress, 8½-lb. female, on third day baby hemorrhaged from mouth, rectum and skin. Transfusion from father, recovery was quick and complete. Mother had normal puerperium.

Normal Pelves—Malpositions (four cases):

Case 53. Para-I, age 21. Ruptured bag of water. Head engaged, O. D. P. severe pains, no progress, mother exhausted. Fetal heart tones good; 7-lb. male, normal puerperium.

Case 65. Para-V, age 36. Very large woman. Hard long labor. O. D. P. tightly engaged, high up, no progress; 8-lb. female, normal puerperium.

Case 83. Para-I, age 19. Occp. Dextra. posterior, cervix dilated, pains hard, no progress; 6½-lb. male.

Case 269. Para-III, age 29. Christian Science treatment until arm presented and uterus threatened rupture. The patient's sister was the only assistant. Chloroform anesthetic, arm replaced, combined external and internal manipulations, brought the head in position for the application of forceps. Successful delivery for mother and child.

Normal Pelves—Toxemia (three cases):

Case 4. Para-II, age 27. Uremic coma, convulsions; casts and albumin in urine. Not in labor, ether anesthetic. Manual dilatation of cervix. Axis traction forceps applied after artificial rupture of bag of water; 6-lb. female delivered. Post partum 18 convulsions in 24 hours, unconscious for four days and delirium for two weeks. Perfect recovery for mother and child. Subsequent history: One year later, not in Chicago, this mother gave birth to child normally but on fifth day she died of septicemia.

Case 49. Para-I, age 26. Eclamptic twitchings, marked edema (attending physician after remaining at the home for six hours left and refused to return).



Fig. 1. Case 74. No Ossification of any bone. Skull membranous. Long bones, cartilaginous with multiple fractures.

Bag of water had been ruptured, contractions were severe. Head not engaged, cervix incompletely dilated, chloroform anesthesia, 8¾-lb. male delivered, complete recovery for mother and child.

Case 204. Para-I, age 27. Eclamptic twitchings, blurred vision; albumin and casts in urine. Voorhees bags inserted, female child delivered in good condition. Mother never freed from casts and albumin but has successfully had her second child, which is living and well.

Pelves Deformed (nine cases):

Case 24. Para-II, age 24. Funnel pelvis (previous labor had been most difficult, resulting in badly forcep marked but otherwise normal child). Voorhees bags inserted at 8 mo. followed by a difficult high forceps delivery; 7¼-lb. male. Mother and child in good condition.

Case 56. Para-I, age 26. Generally contracted pelvis; 7½-lb. female. Normal puerperium.

Case 70. Para-I, age 32. Generally contracted pelvis. Long hard labor, no advance, exhaustion of powers, uncertain fetal heart beat, still-birth female, normal puerperium.

Case 85. Para-I, age 32. Flat pelvis, cervix dilated, hard pains, no progress; 9-lb. female.

Case 190. Para-II, age 35. Same mother; same condition as case 85; 9¼-lb. female.

Case 126. Para-I, age 31. Irregular contracted pelvis, bag of water ruptured, cervix dilated, hard pains, no progress, exhaustion, fetal heart tones uncertain; 6-lb. female, still birth.

Case 174. Para-II, age 32. Voorhees bag followed by high forcep; 8-lb. male, died in 8 hours.

Case 264. Para-III, age 34. Same mother as case 126 and 174. Patient refused hospital care and hysterotomy, although she had lost her two previous children at birth; neighbor acted as nurse. Voorhees bag inserted, 18 hours hard labor, no progress, high forceps applied, under chloroform anesthesia, male child delivered, with berry spoon depression over the left parietal surface, which portion was incised, scalp and skull raised, deformity corrected, parts readjusted, artificial respiration, child living and well to date.

Case 237. Para-I, age 25. Irregular pelvis, extreme degree of scoliosis; mitral stenosis and regurgitation; heart hypertrophied and compensating, twenty-four hours hard labor, no engagement, mother exhausted, manual dilatation, ether anesthetic, forceps on floating head; 8¾-lb. male, living and well. Mother catheterized for one week, otherwise normal puerperium.

Voorhees bags for induction of labor were used successfully in four of these cases, three times, 24, 174 and 264 for contracted pelvis, and once, 204, for toxemia.

INFANTILE ABNORMALITIES

We find in this series 1 per cent., or five children typical Mongolian idiots, with all the characteristics of that unfortunate class of infants—slant eyes, short brachycephalic diameter, protruding tongues, epicanthus, soft flabby flesh, downy hair, limber joints, small features, poor teeth, backward mentality, each suffered from respiratory disturbances and finally succumbed to broncho-pneumonia in early life.

TABLE 5. MONGOLIAN IDIOTS

Mother Case No.	Para	Age	Sex	Wt.	Infant		Father		Nationality
					Age at death	Age	Occupation		
105	III	27	Male	8½ lb.	5 yrs.	30	Typesetter		Amer.
211	IV	43	Male	8¼ lb.	12 mos.	44	Carpenter		Irish
226	II	28	Male	7¼ lb.	19 mos.	26	Janitor		Swedish
297	II	39	Female	7 lb.	19 mos.	40	Auditor		English
304	V	43	Male	.....	7 mos.	42	Account.		Amer.

Four of the five mongols were males. Each mother was a multipara. The families, as may be seen from the chart, represented two Americans, one Irish, one English and one Swedish. Each had healthy previous children, and 226 and 304 have since had one healthy child born.

Hydrocephalus—two cases.

Case 143. Age 22, para-II, history of acute epidemic meningitis one year before this pregnancy, successfully treated with meningitis serum. This 5½ pound female had hydrocephalus, spina bifida, club feet and arms; lived four days.

Case 183. Age 44, para-I; large hydrocephalus, no engagement, craniotomy on living child.

Microcephalus—one case.

Case 213. Age 34, para-III; 6¼ pound male, living and well, but peculiar mentally.

Anencephalus—two cases.

Case 255. Age 23, para-II; 10 pound male, macerated, Stillbirth.

Case 295. Age 20, para-I; female, lived a few minutes. Each mother has since given birth to a healthy child.

Osteogenesis Imperfecta—one case.

Case 74. Age 26, para-II; 5½ pound female; no ossification in any bone; skull membranous; long bones cartilage with multiple fractures. Baby died on fifth day. Fig. I.

Congenital Amputation—one case.

Case 167. Age—para-V; amputation of right arm



Fig. 2. Case 30. Syphilitic pemphigus ulcers on body. Skin peeled off palms and soles. 8 pounds. Still birth.

at elbow, right leg at knee, and only three toes on left foot. Child died soon after birth.

Hypospadias—2 cases.

Case 391. Age 28; para-II; $5\frac{3}{4}$ lb. male.

Case 439. Age 21, para-II; 7 pound male.

Cleft Ear and Webb Tocs—one case.

Case 192. Age 30, para-I; female.

Club Foot—two cases.

Case 143. Club foot (Also hydrocephalus, spina bifida and club arm.)

Case 147. Age 32, para-II; $3\frac{3}{4}$ pound male. Older brother also club foot. This mother was receiving tuberculin at that time for some eye trouble.

Teeth at Birth—one case.

Case 207. Age 22, para-II; $8\frac{1}{4}$ pound male; 2 lower incisors.

Exophthalmus—one case.

Case 263. Age 24, para-I; 5 pound male, syphilitic.

Hemorrhage of the new born—2 cases.

times before I saw the case. The cord was prolapsed and pulseless, a most difficult delivery requiring craniotomy and cleidotomy. Mother developed slight local infection from a vaginal tear but no other complications, she has since given birth to large healthy child by cesarean section.

Trephine of Skull—one case.

Case 264. Age 30, para-III; lost two previous children at delivery. This boy, axis-traction forceps, berry spoon depression over left frontoparietal region (caused by the sacrum prominence; not over the region to which the forceps blades were placed.) A curved incision was made through scalp and skull, curved scissors were used to elevate the depressed bone, blood clots removed and flaps readjusted, artificial respiration instituted and the infant lived and now has good health and goes to school.

Fractured Humerus—one case.

Case 496. Age 28, para-IV; $10\frac{1}{4}$ lb. male. Breech



Fig. 3. Case 167. Congenital Amputation; lived half hour.

Fig. 4. Case 295. Anencephalic monster; lived 20 minutes.

Case 99. Age 25, para-I; female, profuse bleeding from mouth and rectum, purpuric spots all over body; drug treatment of no avail, died 2nd day. The delivery was easy and normal. The child illegitimate.

Case 107. Age 20, para-I; female; profuse bleeding from mouth and rectum, few petechial spots. Transfusion from the father. Recovery. Axis-traction forceps had been used for the delivery.

Since this tabulation was made I have had three more hemorrhagic cases, one in the home and two hospital cases. One home and one hospital case lived. All three were transfused. Two, the two living, received the blood in the superior longitudinal sinus.

Craniotomy was done in two cases.

Case 183. Age 44, para-I, large hydrocephalic head, living baby, but impossible of live delivery except by abdominal section.

Case 464. Age 18, para-I, funnel pelvis; Simpson forceps and version had both been attempted several

extractions, arm in nape of neck, Transverse fracture upper third, good recovery.

CONDITIONS AFFECTING THE MOTHER

Carbon Monoxide Poisoning—one case.

Case 403. Age 22, para-IV. Mother and two children overcome by gas escaping from a water heater, all three revived, the mother pregnant at term, went into labor and gave birth to an eight pound male, still-born.

Malaria Fever—one case.

Case 424. Age 20, para-II. Mother suffering from acute malaria infection at seven months gestation; chills, fever, malaria plasmodies in blood; aborted, child lived 13 hours. Mother recovered.

Pyelitis—two cases.

Case 169. Age 29, para-I; female, Mother had large amount of pus in urine, chills and high fever during last four months of pregnancy.

Case 474. Age 23, para-I; 6½ pound female. Chills, fever, pyuria for four months before delivery.

In each case mother's urine rapidly cleared after delivery. Both children are living and well.

Eclampsia—4 cases.

Case 4. First seen when sudden onset of convulsion and coma anesthetized; manual dilatation and Tarnier forceps; recovery after 18 convulsions, four days unconsciousness and two weeks delirium; casts and albumin in urine slowly cleared up. Baby living and well. The mother died of sepsis at a subsequent labor the following year outside of Chicago.

Case 49. Marked edema, severe twitching, albumin and casts in urine. The attending physician in charge gave up case. Axis-traction forceps, successful outcome. Has since been delivered of another son, she had edema, casts and albumin, but no convulsion.

Case 204. Albumin and casts, great edema, twitchings. Voorhees bags, Tarnier forceps, successful delivery. Has since had a son at which time she had great edema, casts and albumin but no convulsion. Albumin and casts have never entirely disappeared from the urine.

Case 332. High blood pressure; severe convulsion followed delivery of baby before the placenta came away. One severe and several small convulsions during next ten hours. Left Chicago and future history unobtainable.

Pulmonary Embolism—2 cases.

Case 467. Mother died on 12th day, two days after severe chest pains, dyspnea with slight fever.

Case 413. Normal labor, no internal examination. Sudden pain in chest 11th day. Coughed blood, septic temperature, slow but complete recovery.



Fig. 5. Case 74. Osteogenesis Imperfecta.

GOITER CASES

Several of the mothers in the series presented enlarged thyroids but only two are of such unusual interest as to require special notice. Case 302, para-II; age 32, had been under medical treatment for hyperthyroidism for two years when she became pregnant. During the gestation period her thyrotoxic symptoms were markedly exaggerated but soon after delivery great improvement was noted. The thyroid diminished in size, nervousness abated and general health improved but the exophthalmos still exists. The infant was a healthy 8 pound male.

Case 223, para-V, age 36, had a large simple goiter which had not given her any serious trouble. The delivery in this case was most difficult on account of the persistent extension of the child's head in OLA presentation, which was explained by the presence of an immense goiter which the child possessed. This infant's goiter entirely disappeared in about four months, without special treatment.

Flu with Double Pneumonia—one case.

Case 262. Age 28, para-I; 8½ pound female. Mother at four months gestation had flu with double pneumonia; with temperature of 104 and 106 for twelve days. Mother in hospital for the flu but home for delivery. Normal healthy child at term.

Tuberculosis of Mother advanced stage—two cases.

Case 33. Para-II; age 29 years; 8 pound female, normal easy delivery. Mother since died, child living and well.

Case 276. Para-IV; age 30 years; 11 pound male, normal delivery. This mother has since died. Child in good health.

Tuberculosis of Mother—moderate case.

Case 86. Para-II; age 26 years. Normal delivery; 7¼ pound female. Mother's tuberculosis later became quite advanced, since which time I have lost track of this case.

Tuberculosis of both parents.

Case 246. Multipara, gave birth to a premature infant stillborn at about seven months gestation. Both parents are still living but in poor health.

Case 147. Para-II; age 32. Under oculist's care for tuberculosis of eyes. Tuberculin treatments were given throughout the gestation period. Both mother and child living and well to date.

Pendulous Abdomen—Case 407. Para-V; this mother's abdomen was very large and hung as low as her knees when she stood up. She had lost three children at birth between her first and fifth. Two children, the first and fifth are living and well.

Insanity in the Parents. Insanity of transient duration was not considered worth recording, while cases severe enough to require State care are here recorded in the mothers of cases 72, 151, 239, 264 and 294 and in the fathers of cases 159, 177, 298 and 404. The nine children are normal in so far as can be known at present.

(It would be of interest from a sociological standpoint to secure by a follow up system the future life of these children of insane parents, as well as those



Fig. 6. Case 74. Osteogenesis Imperfecta.

of paternal criminal records, several of which we also record, 163, 241, 432, 394 and 387.)

Puerperal fever, either high or prolonged, occurred in only one case 413, para-III, age 28 years; 9¼ pound female, normal delivery. Developed sudden severe pains in chest with bloody sputum, cough and irregular fever on the 11th day, the fever ran an irregular course for seven weeks. Diagnosis: Pulmonary embolism, recovery.

It is well at this time to mention two cases of scarlet fever contact with no bad results.

Case 7. Para-III, age 24 years; 8¼ pound female, normal labor. A few hours before the labor this woman's four year old son was in bed with her complaining of sore throat and vomiting. He had a rash and fever which proved to be scarlet fever. He was kept in another room during the illness, quarantine was very poorly kept by the family and another child in the family was taken ill with the disease but the mother and baby remained free from fever.

Case 10. Para-II, age 27 years; 8½ pound female. The home was under quarantine for the four year old daughter three days before this labor began. The practical nurse on the case took care of both; scarlet fever and obstetrical patients without contamination resulting.

Placenta previa, marginal, afforded no special consequence but one central variety encountered was packed and removed to hospital so none was here recorded.

Adherent Placenta gave no trouble in this series of cases, each placenta came away normally or with slight expression, Manual removal was not necessary in any case.

Post Partum Hemorrhage severe enough to require packing occurred but once during the period covered by this report and that case had been delivered by a midwife.

Gonorrhea was met with in a few of these mothers but not one of the children showed contamination although I have seen in home deliveries three gonorrheal infections of infants, one severe of the eyes and one severe vaginal infection in a breech delivery, each requiring persistent treatment for a long time, but both eventually were cured without permanent injury. The third neglected case was treated with alum solution for several days and now the young lady is almost totally blind as a result of the cornea scars on both eyes.

Perineal Lacerations. These have been rather frequent, chiefly first degree, a few second degree. All were repaired just before or right after the delivery of the placenta.

Breast Abscess occurred during third week in two of the mothers.

Anesthetics were administered to practically all of the mothers during the delivery. Ether was generally used but chloroform or a mixture of the two was also frequently given. Gas was administered but once.

FETAL MORTALITY

Stillbirths numbered seventeen (3.4%) of the five hundred deliveries but excluding prenatal diseases and malformations of the fetuses the actual intranatal death was only 1.2% all six of which might have been saved by better facilities or more efficient assistance.

Syphilis accounts for six macerated fetuses, four of which were premature.

TABLE 6. SYPHILITIC STILLBIRTHS

Case	Para	Age	Gestation period	Sex
30	Fig. II	26	8 months	Female
146	II	..	6 months	Female
148	..	..	6 months	7 lb. male
440	II	20	7 months	3¼ lb. male
488	..	37	8 months	Male
52	IV	..	Full term, no living children	10 lb. male

Prematurity—Case 246. Tubercular, poorly nourished parents; 7 mo. gestation, spontaneous delivery.

Case 275. Para-II, age 30 years; 6½ mo. gestation, cross birth.

Malformations. Case 255. *Anencephalic monster*, macerated, 12 lb. male. This woman has two healthy sons, one before and one since this monster's birth.

Case 138. *Hydrocephalus*. The mother, para-I, age 44 years. Catholic religion. Baby's head as large as the mother's, Craniotomy on living deformed baby was deemed preferable to injuring a healthy mother. The puerperium was normal.

Gas Poisoning. Case 403. *Carbon Monoxide Gas*, para-IV, age 28; overcome by gas from water heater in a closed room; spontaneous labor, 8 lb. male.

Case 422. Para-I, age 31, *Nitrous Oxide Gas*, given with each pain for twelve hours, fetal heart tones became very irregular, forceps were applied; 7¾ lb. male

child delivered dead. More pain and less gas would have saved this child.

Breech Deliveries. Case 27. Para-I, age 26; a poorly nourished delicate woman, nephritic but not toxic, delivered of a 6 lb. female pale, limp, lifeless. This mother has since given birth to two healthy boys.

Case 119. Para-IV, age 37, poor health, secondary anemia for over a year, gave birth to a 9 lb. female which could not be resuscitated.

Forceps—Contracted pelvis.

Case 70. Para-I, age 32, generally contracted pelvis.

Case 422. Para-I, age 31, very plat pelvis.

Both of these babies should have been saved by Cesarean section to which neither family would consent.

Case 446. Para-I, age 18, Funnel pelvis, two physicians had repeatedly tried for many hours unsuccessfully to extract this baby by forceps, also by version. I was called in and found the mother in good condition but the baby was dead, the cord prolapsed and pulseless. A difficult delivery of an 8 lb. female was accomplished after craniotomy and cleidotomy.

Neo-natal Deaths—nine or 1.8%.

Malformations.

Case 295. Encephalic monster lived 20 minutes. See Fig. IV.

Case 167. Congenital amputations and prematurity, lived 30 minutes. See Fig. III.

Case 143. Hydrocephalus, spina bifida, club feet and arms, lived 4 days.

Case 74. Osteogenesis imperfecta, lived five days. Fig. V and VI.

Prematurity.

Case 424. Malaria fever, lived 13 hours.

Case 426. Over exertion, lived 7 days.

Hemorrhagic Disease, Case 99, lived two days.

Contracted pelvis, forceps, Case 174, lived 8 hours.

Breech Delivery, Case 132, lived 1 hour.

Maternal Death—one case. In the five hundred deliveries only one mother, Case 467, lost her life. She died from pulmonary embolism on the twelfth day post partum.

TABLE 7. MORTALITY

<i>Maternal Mortality</i>	Breech, 2.
1 Mother died, 0.2%	Forceps, 2.
<i>Infant Mortality</i>	Nitros oxid, 1.
Still birth 17, 3.4%	Neo Natal Deaths 9, 1.8%
12 Unavoidable, 2.4%	7 Unavoidable, 1.4%
Syphilis, 6.	Mal developments, 4.
Premature, 2.	Prematurity, 2.
Mal development, 2.	Hemorrhagic disease, 1.
Gas CO poison, 1.	2 Avoidable, 0.4%
Forceps, 1.	Forceps, 1.
5 Avoidable, 1%	Breech, 1.
	No toxemias was lost.

REQUIREMENTS FOR HOME DELIVERIES

Asepsis demands 1st. That the pregnant woman, her bedding and her delivery room must be socially clean according to her standard of living. 2nd. The nurse, neighbor, friend, husband or relative in attendance must be as clean as the surroundings and should have washed

hands and wear a clean apron. 3rd. The attending physician must be the one surgically clean person about the place, his hands scrubbed scrupulously, boiled rubber gloves must be worn, apron laundered but may not be sterile. All instruments must be sterilized by boiling.

Internal examinations are seldom necessary and then only by rectum as a rule when prenatal attention has been thorough.

The family must provide the following list of articles, most of which every household possesses:

- 1 pound absorbent cotton.
- 5 yards sterile gauze.
- 4 ounces olive oil.
- 4 ounces castor oil.
- 2 ounces comp. cresol solution.
- 1 ounce alcohol.
- 1 ounce powdered boric acid.
- 1 cake white soap.
- ½ dozen clean diapers or towels.

This supply is quite sufficient for any delivery and yet is incomparably small when contrasted with the usual lists furnished by our text-books and prenatal pamphlets.

Preparedness requires the physician's equipment to be complete in every detail. 1st. Thorough knowledge of the obstetrical conditions and possible emergencies which may arise. 2nd. Technical skill to do the right thing at the proper time and in the best way. 3rd. Instruments of such kind and variety as may be required at the time for the proper management of any contingency which might arise.

My own obstetrical outfit consists of a suit case containing a copper sterilizing pan with wire tray and a lid, large enough to hold all instruments, a douche can with fitting for rectal, vaginal, subcutaneous or intravenous injections, a 10 mil. Luer syringe.

- Testing set for urinalysis.
- Blood pressure gauge.
- Pelvimeters and tape measure.
- Three small flat enamel dishes.
- Scrub brush, liquid soap and nail file.
- Stomach tube, tracheal and urethral catheters.
- Rubber gloves, Voorhees bags, Kelly pad.
- Hypodermic set and emergency drugs in ampules.
- Ether, chloroform and a mask.
- Alcohol, cresol and ergot.
- Cord outfit, baby scales and 1% Sol. AgNO₃.
- Knives, scissors, hemostats.
- Needles, cat-gut and silkworm gut.
- Forceps—Simpson, Tarnier and bistotrite.
- Perforator, hook, Holmes' packer, etc.
- 5 yards sterile gauze, 1 pound sterile absorb. cotton.

This equipment may seem quite formidable for the average physician but if one expects to do major obstetrical work under unfavorable circumstances, each article enumerated will sooner or later be required to serve a useful purpose.

I do not wish to convey the idea that all of my cases are conducted in the homes for such is not the case. I much prefer to have my patients in the hospital for their benefit and my own convenience.

CONCLUSIONS

Home deliveries are frequently demanded as the choice of the family or on account of necessity of the situation. Obstetrical cases may be successfully conducted in private homes.

The supplies required by the family are few and inexpensive.

The physician must possess the knowledge, the training and the equipment to meet every requirement.

Pathological conditions are frequently encountered; they must be recognized and properly managed.

Asepsis attains the degree of social rather than that of surgical cleanliness.

Infection rarely develops as a result of ordinary household sanitary environments.

Results depend upon antepartum attention, intrapartum assistance and postpartum care.

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GOITER*

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The invitation to attend this meeting of the Inter-State Post Graduate Assembly is a compliment which I highly appreciate.

In view of the fact that the goiter situation was recently discussed at the Bloomington meeting of the American Association for the Study of Goiter, it may seem presumptuous for me to bring the subject to your attention, but it is probable that many of your members were not present at that meeting and have not had the opportunity to read the papers.

If one will visualize a map of North America and go back thousands of years to the Ice Age, he will see that the entire northern three-fourths of it was covered by an ice sheet. Parenthetically, two stages of the Glacial Period are called the Earlier and the Later Wisconsin stages, and this city of Milwaukee rests upon soil that was covered for at least twenty thousand years by ice. As a consequence of the prolonged melting of the ice the soil was washed for a long time and

the highly soluble iodides were leached out and carried to the ocean.

Now, a map showing the distribution of endemic goiter for the United States presents a striking correspondence to the ice sheet. The same is true of Europe and will probably be found also in Asia, when it has been thoroughly studied. The evidence that iodine deficiency is a prime factor in the causation of endemic goiter seems beyond dispute, so much so that it is the duty of every afflicted community to supply iodine in some form to children. Consider the estimate that Lake Superior is so poor in iodine that it would take a person a thousand years to drink enough of its water to acquire as much iodine as the thyroid contains. I am fairly familiar with the measures that are being taken in some communities in the United States and in Switzerland toward supplying iodine to children. This work should be encouraged and extended, for it seems probable that endemic goiter can be stamped out just as effectively as typhoid fever. It is indeed surprising that the ancients should have stumbled upon burnt sponge as a remedy for goiter. Of the various sea flora and fauna which have been analyzed, sea sponge contains more iodine than any of them. Had burnt sponge been used as a preventive measure through all these years, it is reasonable to suppose that goiter would now be a rare disease. So far as exophthalmic goiter is concerned, I look upon it as a cousin of ordinary goiter, and whether the incidence of it will be materially lessened by the administration of iodine in childhood, remains to be seen.

Adolescent goiter is a simple physiologic hypertrophy of the thyroid, responding to iodine therapy. When neglected it may go on to the colloid, the adenomatous or the hyperplastic type.

The most common type of goiter demanding surgery is the adenomatous which is seldom found outside of goiter districts. We usually speak of adenomas as toxic or non-toxic, but potentially they are all toxic. I think it safe to say that, given sufficient time, at least 95 per cent of adenomas will produce toxic symptoms, primarily affecting the sympathetic nervous system and secondarily the heart and other organs. The secretion from adenomas differs from that of the normal thyroid and is probably never physiologic in action but pathologic. Adenomas are simply encapsulated tumors without any use-

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ful function. As evidence of this statement, I submit the following: 1. It is not uncommon to find cretinism or myxedema in individuals with adenomas, but without sufficient thyroid gland; 2. Toxic adenomas never produce exophthalmos—when that symptom is present with adenomas you may be sure that areas of hyperplasia of the thyroid gland itself will also be found; 3. By employing a complement fixation test, Shepardson has shown that the secretion of adenomas differs from that of the normal thyroid. A brief statement regarding this reaction appeared in the *Journal of the American Medical Association*, 1923, LXXXI, 1435, and the completed data are soon to be published.

Adenomas are very prone to degenerative changes, particularly cystic, fibrous and calcifying. These degenerations follow hemorrhages within the capsule of the adenoma, due, as shown by Delamere and myself, to the peculiarities of the blood vessels. It was found that both the arteries and veins lose their adventitia immediately after penetrating the capsule and that the muscular and inner elastic coats became thinner. The arteries were found capable of withstanding a pressure equivalent to 250 m. m. of mercury, but the veins ruptured at a pressure of about 100 m. m. Such an action as violent coughing might easily raise the venous blood pressure in the neck vessels to such a degree that the fragile veins in adenomas would rupture. It is seldom that we find adenomas of any considerable size, more than an inch in diameter, that do not show evidence of hemorrhage.

In approximately 2 per cent of my cases of adenomatous goiter, cancer has been found and others have reported an even higher percentage.

Pressure effects from adenomas either in the neck or within the thorax are quite common and may be very serious. Some of the intrathoracic goiters displace the heart to a marked degree and obstruct the venous return to the heart.

Medical treatment of adenomas is so far without curative value and x-ray treatment is distinctly contraindicated because of serious and permanent damage it may inflict on the thyroid gland itself with the production of hypothyroidism.

In view then of the above statements that adenomas are without useful function, that they produce toxic effects after a varying length of time, that they are subject to degenerations both

benign and malignant, that they often produce serious pressure symptoms, and that medical treatment is of no avail, I take the stand that they should be removed early before toxic symptoms are manifest. The operation should be thorough, both lobes carefully examined and all adenomas removed. One should not content himself with merely excising the larger ones but should pick out all the small ones which can be found, in a manner similar to myomectomy for fibroids of the uterus. I am in the habit of palpating every part of the thyroid and do not hesitate to cut down on any suspiciously firm area.

The surgical treatment of true exophthalmic goiter—the hyperplastic thyroid—has, in our hands, been distinctly modified by the preliminary use of Lugol's solution. Plummer has made an important contribution to our therapeutic resources. For many years I have given small doses of sodium or potassium iodid previous to operation for exophthalmic goiter, following the suggestion of Marine, but with only indifferent results in the majority of cases. Lugol's solution supplies iodine as such and it seems to influence the hyperactive thyroid far more than the salts of iodine. Used intensively in doses of ten minims three times a day for two weeks, it converts a very active gland into a resting type, so that one may proceed to a resection of both lobes without preliminary ligations. It is true that the thyroid becomes much firmer and more friable under Lugol's, but the added technical difficulties of the operation are outweighed by the improved condition of the patient and his smooth recovery.

Whether permanent recoveries will result from the administration of Lugol's solution is, in my opinion, very doubtful and my present conviction is to advise operation in every case as soon as the resting stage has been reached. We cannot afford to risk further damage to the nervous system, the heart and other organs that is so often found where dilatory tactics have been pursued. The operation in the hands of any surgeon with good training is relatively safe and the sooner such cases are operated upon, the lower the morbidity and mortality rates will become. The old maxim that "Early operations are safe operations" is well exemplified in exophthalmic goiter.

So far as operations for goiter are concerned, there are only a few minor points in technic

that I will bring to your attention. The skin incision two to three fingerbreadths above the clavicle and closely following a transverse crease line—the typical Kocher incision—gives the best cosmetic results. The platysma is also divided in the same line and the flaps reflected above as far as the thyroid cartilage of the larynx and below to the suprasternal notch. The sternohyoid and sternothyroid muscles are separated in the midline along their complete lengths, so that it is seldom necessary to cut them transversely. After removal of the goiter, the wound is flushed with Ringer's solution to wash out any blood clots or thyroid secretion as well as to emphasize any bleeding points and the wound is closed without drainage, except in deep sub-sternal goiters. The muscles, including the platysma, are brought back into their proper positions by fine interrupted sutures in separate layers and the skin closed with Michel clips which latter are removed on the third day. Only plain catgut sutures and ligatures of number O and double O are used. The result in the vast majority of cases is a fine linear scar without adherent muscles.

This paper is based on an experience of fourteen hundred operations for goiter.

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INJURIES TO BLOOD VESSELS AND THEIR MANAGEMENT*

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In explanation of the choice of this subject I might say that for the past three years the surgical services at the Cook County Hospital have so divided the work that certain men are able to do more work along some line in which they are particularly interested, and my work has been along the line of blood vessel surgery. During this time I have accumulated some experience that may be of interest to you. In the beginning I felt it would be necessary for me to do some experimental work on dogs and also some dissection on cadavers as well as to review the physiology of the blood and blood vessels. As I look back on these experiments and consider the particular problems that have confronted me in the County Hospital, I can only say that we are

again brought face to face with the fact that there is no teacher like clinical experience, and not all laboratory methods work out in the operating room.

I shall confine my talk to four topics in blood vessel surgery:

1. Blood vessel suturing or blood vessel repair.
2. The necessity for blood transfusion. I shall speak with particular reference to the advisability of using blood transfusion rather than normal salt infusion.
3. The advisability of concomitant ligation of the main vein with the main artery.
4. The necessity for provisional control in approaching the more difficult blood vessel operations.

Blood Vessel Suturing. In suturing blood vessels I have found the experimental work much more interesting than the practical work. In practice you will find very few indications for blood vessel suture, that is, anastomosis. And what few you do find will be rather difficult to handle unless you have had some particular experience along this line. Blood vessel suturing other than anastomosis you will find consists in the suturing of lateral tears in the larger arteries and veins. In cases where vessels are severed by gunshot, stab, or by fragments of bone in fracture cases, it becomes a difficult technical procedure to restore the lumen, especially so if any vessel substance has been lost. If one must dissect the artery from its bed for some considerable distance, the sutures must then be put in under traction. Finally, when you consider the manipulations necessary and the probability of subsequent infection, the prognosis is not cheerful. Suturing, as you know, fails for the following reasons: First, because of immediate or subsequent thrombosis; second, leakage due to insecure suturing or to infection. Secondary hemorrhages in repaired cases are more formidable than the primary hemorrhages of the original injury.

The suturing of veins is comparatively easy and can be done with little special preparation. It is not absolutely necessary to have special suture material as it is in arterial work. One may use very fine linen and small round needles or fine twisted silk dipped in sterilized paraffin or liquid petrolatum. In the suture of veins as in arteries one should remember a fact that was called to our attention by Murphy in 1907,—that

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in blood vessel suturing absolute hemostasis is not to be had immediately along the suture line. If the suturing be reasonably accurate the small crevices will be quickly closed by fibrin clot formation. This is even more noticeable in veins.

Blood Transfusion. The next subject I want to review with you is the necessity for blood transfusion in cases of hemorrhage. We are prone to think of blood transfusion as an heroic procedure rather than as a commonplace and not too difficult a therapeutic measure. Again, we are quite likely to feel that so long as the patient is not *in extremis* from blood volume loss there is little or no indication for transfusion. If one has constantly in mind the physiologic activities of the various blood elements, there will be found many more rational indications for transfusion.

Where large vessels of an extremity are injured and subsequently ligated, we must keep in mind that the blood pressure must be maintained at a good level and the blood of such a quality that the tissue needs may be fully met and gangrene avoided.

The next point I want to make is the correct interpretation of subcutaneous injuries of blood vessels with hematoma formation. Here one must remember that the hematoma represents approximately 30 per cent. of the blood volume lost and, although the fluid elements are reabsorbed and serve to maintain the blood pressure to a fair degree, nevertheless the immobilization of the cellular elements may endanger the viability of peripheral structures. In severe hemorrhages where peripheral vessels have been severed or ligated or amputations done we have first to combat the shock and acute anemia. Normal salt solution will here be of greatest use because the volume can be restored and blood pressure brought back to somewhere near normal. This may, however, be only a temporary recovery. If later the patient shows the effects of cellular anemia one is not justified in again resorting to normal salt infusion for it will not be followed by the response which was apparent after its primary use. Blood transfusion now becomes imperative. I feel that inestimable damage may be done in certain cases by repeated salt infusions.

Blood transfusion has a wide field of usefulness in cases of amputation or in blood vessel injuries by promoting rapid healing and avoiding infections and sloughs. The vitality of a part

depends upon quality of blood supplied as well as upon the quantity available.

Just a word of encouragement to those who are timid about blood transfusions because of the fuss made over incompatibility of certain bloods. Direct matching—donor's corpuscles and recipient's serum—is a simple procedure easily learned.

As to the best method of blood transfusion, I can only say that from experience at the Cook County Hospital where we change internes every three months, we feel that the citrate method is best suited to the majority of workers. Where many transfusions are done with well-trained assistants the whole blood administered by either the Unger or Lindeman method or that described as the Kimpton-Brown-Percy method is probably more desirable.

Concomitant Ligation of Main Vein with Main Artery. Previous to 1913 it was a rather well-founded idea that the concomitant ligation of the large vein with a large artery of an extremity led to gangrene of that extremity more frequently than did ligation of the main artery alone. About 1913 the attention of Makins, the British surgeon, was called to the fact that in arteriovenous aneurisms when they tied above and below and dissected out the sac which was composed of the anastomosis of both artery and vein, they had fewer cases of gangrene developing than in those cases in which they ligated the artery above and the artery below and sutured the vein to preserve its continuity. Then Oppel, who had been working with the reversal of the circulation after the method of Wieting, observed that following his attempt at anastomosis of the proximal artery to the distal vein in cases of impending gangrene, the condition improved, but probably not due to the fact that arterial blood passed through the vein but due to the retardation of the return flow of venous blood. Then one of Makins' associates, VanKend, did some experimental work in which he showed rather conclusively that if you must ligate the principal artery in an extremity you should at the same time ligate the principal vein. More recently, in 1923, Brooks and Martin, of St. Louis, have done some experimental work along this line which has gone to substantiate the previous opinions of both Oppel and Makins.

We will take just a moment to discuss very briefly the rationale of this proposition. The

blood supply of an extremity depends upon the size and number of the arteries supplying the extremity, the size and number of the veins returning blood from the extremity, the rate and propulsive power of the heart, and the volume and character of the blood, plus the metabolic activity of the tissues.

What happens when you ligate the principal artery to an extremity? If you ligate the principal artery to an extremity, the first step you take in the procedure is to shut off the arterial blood going to the part, thereby lowering the peripheral blood pressure. In lowering the peripheral blood pressure there is a certain minimum beneath which the interchange of substances between the cells and the blood will not take place, and the cells will die in consequence. So you must maintain the blood within this capillary bed at a certain pressure in order to preserve the vitality of the tissues.

Then again, if you ligate a large artery and keep the artery closed for some considerable period of time, the capillaries will collapse for want of blood and if the capillaries remain collapsed for any considerable period of time they will not be readily reopened for the passage of the circulation, and there will begin a true focal gangrene in the extremity which will, of course, lead on to a general necrosis or gangrene. To combat this you can ligate the main vein at the same time you ligate the artery or just before you ligate the artery. If you ligate the vein you will then have the entire vascular tree full of blood. Your hope is to keep fluid media in the extremity whereby the tissues are supplied with nourishment over that critical period, the first twelve to fourteen hours. During this period the vessels at least have sufficient fluid in their lumens to keep them from collapsing. At the end of the twelve to fourteen hours slight movements of the toes or fingers, as the case may be, will increase the metabolic activity of the cells and they in themselves will then demand more blood, which will come by way of the collateral circulation. This attraction between cell and blood has been very well described by Bier who has given to it the name of "Das Blutgefühl." That factor has a very important bearing on this critical period after ligation of a large vessel. This is particularly important in the case of the popliteal, axillary and common carotid arteries. There is no question in my mind but

that if we did a concomitant ligation of the internal jugular with the common carotid we would get fewer cerebral changes than we do when we do not ligate the vein along with the artery.

Provisional Control by Ligature. The last subject to which I would call your attention is the provisional ligation of arteries preparatory to doing work on the injured blood vessel. As previously stated, the first work I did in preparing myself for this special field was in the laboratory, and there I failed to learn many of the most important facts. That which I now feel is the most important point in all this vascular work is *good provisional control*. If you have an injury, whether it be by gunshot wound or tearing of a large vessel like the popliteal or the femoral or the axillary artery, you should first establish a good working program, and in this working program the most important thing is thorough knowledge of your anatomy with a view to obtaining provisional control of the vessel upon which you are going to do your work. Subcutaneous ruptures of the femoral, popliteal and axillary arteries are so often approached by cutting directly down on the artery and hurriedly scooping out the clot, then attempting to grab the vessel; and I say *attempting*, because I have tried such methods. In the case of large vessels you usually have so much hemorrhage over the field that you are at a loss to know just where the end of the vessel is to be found, consequently you make a grab with a pair of eight-inch forceps and get everything, nerves, muscles, fascia, etc., in your forceps. You crush the nerves and tissues generally and do a lot of damage that would not have been necessary had you been forearmed with this plan of securing thorough provisional control.

I will take very little more of your time in talking but will show you a few slides to illustrate what I mean by provisional control, why I believe it is absolutely necessary, and how it can be done.

If the wound in which you are to work is possibly infected, the placing of your provisional ligatures can often be done at such distance that there will be little or no chance of contamination. If you have had any such experiences as I have had in this work I am sure that once you have familiarized yourself with the method of provisional control you will be much more likely to open at some distance and put in a provisional

ligature in many cases where you now approach the area without this protection.

The provisional ligature I speak of is not really a ligature, and the vessel is not really ligated. I make provisional ligation in two or three ways. The first and simplest method is to take obstetrical tape and pass it around the artery without tying, attach an artery forceps and have an assistant hold it taut. When the force is relaxed the blood will immediately flow through the artery. If necessary to otherwise employ the man holding the tape, it is easy to take a piece of rubber tubing, such as we use for colonic flushing and by tying the tape over this you can produce hemostasis without injuring the vessel intima.

Another point I want to make is in regard to the suturing of blood vessels where you do not care to restore the lumen or where you are not interested in doing an anastomosis. I have found that a great deal of difficulty has arisen, especially in aneurysms, in trying to dissect up the main trunk to apply a ligature. There are many men who have never thought of suturing the vessel itself. Sutures will often hold much better than a circular ligature. It is the same principle that Matas has used in his aneurysmorrhaphy, where he begins at the bottom and sutures the aneurysm in layers, producing his obliterative endo-aneurysmorrhaphy. This has done away with a great deal of dissection and traumatization in trying to get rid of these sacs. By sewing up or plicating these sacs by the Matas method you do away with the hemorrhages which occur from opening of collaterals into the sac.

One more point I might bring out at this time is in regard to injuries in which the vitality of the part is jeopardized by ligation of large vessels. In these cases we should not follow the old teaching, of putting these limbs absolutely at rest distal to the point of ligation. I believe that these limbs, especially the hands and feet, should not be elevated unless there is infection, and then I do not know that there is any material advantage in elevation. The limb should be somewhat depressed rather than elevated. We always think of putting it up on a pillow and placing splints on the side to keep it absolutely quiet. I do just the opposite—lower the extremity and put on no splint. I now keep the foot depressed or the hand down, and keep a therapeutic light over the extremity advis-

ing the patient to move the fingers or toes as much as he can—to keep wiggling them all day long—because there is nothing that will bring blood to a part so quickly as the need for oxidation in these active muscles. So keeping the fingers moving or the toes wiggling will call a good deal of blood to the part, and many times will be just the measure that will prevent gangrene.

30 N. Michigan Ave.

A PERIODIC HEALTH EXAMINATION CAMPAIGN

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Secretary, Adams County Medical Society.

QUINCY, ILL.

During April and May, "Health Week" was celebrated in practically all the counties of Illinois, in accordance with a proclamation of the Governor and the Illinois Department of Public Health. Along with many other local county organizations, the Adams County Medical Society was asked to participate. After careful consideration of the matter, the Society decided to cooperate and agreed to lend their efforts to conduct an educational campaign for periodic health examinations. As a result the Society conducted one of the most active public campaigns for the education of the public in a single health measure that has ever been conducted in Adams County by the local medical society. Since our efforts appeared to attract considerable attention, judging by the inquiries received, and believing our experience might be somewhat helpful to physicians in other communities desirous of conducting such a campaign we will briefly state what we did.

1. We had posted in the windows of the leading business houses large size posters, size 15" x 19", entitled "How's Your Health? Have a Medical Examination." These were procured through the Illinois Tuberculosis Association, Springfield, and were distributed by Boy Scouts.

2. We had printed a special illustrated 4-page folder, size 6" x 9", which told the what and why of periodic health examinations in plain language. A supply was sent to every member of the medical society for his reception room table, and thousands were distributed during a parade and pageant held during health week, by the Boy Scouts.

3. We secured three copies of the film "Work-

ing for Dear Life," produced with the advice of the National Health Council by the Metropolitan Life Insurance Company, which has a strong plea for periodic health examinations. This was shown in four Quincy theatres during one whole week and was seen by thousands. These films were loaned free except for transportation charges, and were procured from the Illinois Department of Public Health, Springfield.

4. We had several write-ups pertaining to periodic health examinations in the local newspapers, which were secured through the Lay Education Committee of the Illinois State Medical Society, 25 East Washington Street, Chicago, without cost.

5. We furnished banners for the health parade, which were made from posters from the Illinois Tuberculosis Association. These banners were carried by Boy Scouts.

6. We purchased a set of 30 beautiful lantern slides, together with a lecture outline, pertaining to periodic health examinations, which were specially prepared for lecture purposes to the laity. Two lectures have already been given and they will be used during the coming year before women's clubs, lodges, civic organizations, etc., by various members of the society. They were secured from J. A. Rawson, Jr., 18 E. 37th St., New York City.

7. For the physicians, we held a meeting devoted entirely to periodic health examinations at which the value, necessity, methods, technique, etc., were thoroughly explained by three physicians. In addition, blank forms for recording such examinations, as published by the A. M. A. and the Illinois Association for the Promotion of Periodic Health Examination, 231 S. LaSalle Street, Chicago, were distributed to every member of the medical society. Also every physician received a copy of Dr. Haven Emerson's instructive reprint "Periodic Medical Examinations of Apparently Healthy Persons," which explains in detail the objects, technique, etc., of these examinations. (Secure from A. M. A.)

Anyone desirous of securing further data pertaining to a periodic health examination campaign, write to the National Health Council, 370 Seventh Ave., New York City, which has given this matter thorough study.

Just what the results of our campaign will be, it is too early to state; however, we believe it

cannot help but reflect much good to the local profession.

Incidentally, you might be interested to know what the entire expense of this campaign was to the Society. The total bills for everything were approximately \$65.00.

731 Hampshire Street.

CLASSIFICATION OF GOITER FROM THE STANDPOINT OF THE GENERAL PRACTITIONER*

JAMES H. HUTTON, M. D.

CHICAGO

To many of us the most confusing thing about the goiter problem is its terminology. There are almost as many names and classifications as there are writers on the subject. Every author seems to feel that he must offer a new classification or modify some of the existing ones. This multiplicity serves only to emphasize our ignorance of the real etiology and pathology back of various clinical pictures and to confuse all but the very elect. Some terms are thought to indicate the histology or pathology underlying various clinical manifestations, others indicate the age incidence of the goiter or its geographic distribution, while still others refer to its anatomic location.

Below is an arrangement of terms and classifications occurring in the literature at present.

ARRANGEMENT OF TERMS

Simplex Non-Toxic:

(a) Diffuse Colloid Goiter (also called by various writers as follows):

- 1—Simple goiter.
- 2—Endemic goiter.
- 3—Adolescent.
- 4—Adolescent vascular.
- 5—Adolescent colloid.
- 6—Non-toxic.
- 7—Goiter with apparent normal secretory activity.

(b) Adenomatous goiter without hyperthyroidism (also referred to as):

- 1—Endemic.
- 2—Simple.
- 3—Non-toxic.
- 4—Nodular.
- 5—Goiter with apparently normal secretory activity.

Toxic:

(a) Adenomatous goiter with hyperthyroidism (also called):

- 1—Goiter with increased secretory activity.
- 2—Toxic (basedowian syndrome).
- 3—Atypical hyperthyroidism (basedowoid syndrome).
- 4—Pseudo—Graves' disease.
- 5—Formes frustes of Graves' disease.
- 6—Thyro-toxic.
- 7—Secondarily toxic.

(b) Exophthalmic goiter (also called):

*Read at the meeting of the American Association for the Study of Goiter at Bloomington, Ill., Jan. 30, 1925.

- 1—Graves' disease.
- 2—Parry's disease.
- 3—Basedow's disease.
- 4—Toxic.

Classifications—

- Diffuse colloid goiter.
- Adenomatous goiter without hyperthyroidism.
- Adenomatous goiter with hyperthyroidism.
- Exophthalmic goiter.
- Myxedema.
- Cretinism.
- Childhood myxedema.
- Thyroiditis.

Malignant disease of the thyroid.

- Simple, slight over-activity.
- Goiter clinically non-toxic—cystic, colloid, adenomatous.

Toxic goiters—this includes all toxic goiters except exophthalmic goiters.

- Goiters with approximately normal secretory activity or hypo.

- (a) simple and endemic.
- (b) goiters with adenomas.
- (c) colloid goiter.

- Goiters with increased secretory activity.

- (a) adolescent goiter.
- (b) goiter with adenoma.
- (c) goiter of Graves disease.

- Goiter with degeneration.

- (a) malignant goiters.
- (b) goiters with cystic, hemorrhagic, fibroid, or hyaline degeneration.

- Non-toxic parenchymatous goiter.

- Hypothyroid goiter.

- Non-toxic nodular goiter—colloid goiter, fibrous goiter, cystic goiter, intrathoracic goiter.

- Congenital goiter.

- Accessory non-toxic goiter.

- Malignant goiter.

- Thyroiditis and strumitis.

Exophthalmic goiter:

- Colloid.

- Adenoma—with hyperthyroidism,
without hyperthyroidism.

- Tuberculosis, syphilis, thyroiditis, malignancy.

- Physiological hypertrophy, including the goiter of puberty, pregnancy and menopause.

- Endemic goiter—a strictly iodine deficiency disease.

- Non-toxic goiter—persistent physiological, colloid, fetal adenomatous, cystic, neoplasm.

- Toxic goiter—any of the preceding non-toxic group which are toxic.

- Exophthalmic goiter—a clinical entity; a disease which runs a typical course with remissions.

When the profession differs as to the nomenclature or treatment of a condition it is evidence that the profession is ignorant of many phases of the condition under discussion. Goiter exemplifies the truth of this statement. The multiplicity of terms and classifications serves to emphasize our ignorance and to still further confuse the average man. After all most of us are just average doctors and the problems of one are not essentially different from those of others.

We are not agreed even on the definition of the term. Webster's New International Dictionary defines it as follows:

“GOITER: An enlargement of the thyroid gland often associated with cretinism and my-

xedema.” How many of us have this conception of it?

Exophthalmic goiter is quite commonly present without goiter. A medical student recently asked “Can a patient have exophthalmic goiter without having a goiter?” When I told him such was possible he queried, “Why the name?” Why indeed! A surgeon doing a very large amount of goiter work feels that the term thyrotoxicosis should be applied to Graves' disease. Other men of large experience apply it to adenoma with hyperthyroidism. There is more logic perhaps on the side of the surgeon but why the term at all so long as we are uncertain of the clinical picture it should designate?

The dictionary defines endemic disease as one which is constantly present to a greater or less degree in any place. Many men speak of endemic goiters as if endemic described a certain type of goiter. While diffuse colloid goiter may be more common than any other in goiter zones yet adenomatous goiters are constantly present in the same territory albeit in smaller numbers. Why not drop from the literature endemic as an adjective applied to goiter? It is of no value and serves only to add to the confusion of terms with which we struggle.

An adolescent patient may have a goiter. In fact, many goiter patients are adolescents but is the goiter adolescent?

Quoting Webster again: *Adolescent*—“Advancing from childhood to maturity.” *Adolescence*—“Youth, the period of life between puberty and maturity.” Can either of these terms be well applied to any goiter? An adolescent patient may have a colloid goiter, Graves' disease, an adenoma without hyperthyroidism, and possibly occasionally a denoma with hyperthyroidism. What good is the term in discussing goiter?

There are a few things on which all are agreed. All goiters are divided into toxic and non-toxic. In the non-toxic group we place those not accompanied by an increase in the basal metabolic rate or other evidence of increased thyroid activity, or, at least, by only slight or transient evidences of such increase.

In the toxic class we group those goiters showing an increase of thyroid activity as manifested by signs of hyperthyroidism leading probably to

an abnormal quantity or quality of thyroxin—if one wishes to designate the thyroid secretion by that term. Many writers feel that an adenoma with hyperthyroidism is accompanied by an increase in the *amount* of *normal* thyroid secretion in the body. While many believe that exophthalmic goiter owes its symptoms to the abnormal quality of the thyroid secretion Plummer believes the thyroxin molecule is incomplete as to its iodine content and is poisonous because of this deficiency.

In a third group we can place the various degenerative conditions, inflammations, and malignancies.

We come to thorough disagreement when we begin to classify the various kinds of toxic and non-toxic goiters. Much of this argument is mere splitting of hairs and serves only to emphasize our ignorance of the cause of these various kinds of goiters.

When a goiter patient comes into the office the doctor should decide first whether the goiter is toxic or otherwise, and second, whether there is an adenoma present. If he is able to make these decisions early there is little danger of his getting on the wrong track with his treatment.

ADENOMA WITH HYPERTHYROIDISM

Goiter always present.

Asymmetrical enlargement of thyroid or nodules in the thyroid.

Onset insidious. Course variable, extending over many years. Frequently a history of repeated attacks of hyperthyroidism during this period.

Tachycardia.

Nervousness.

Tremor irregular and less marked.

Loss of weight and strength.

Increased appetite.

Thrill and bruit usually absent.

Superior thyroid arteries not usually palpable.

Exophthalmos almost always absent.

Tendency to hypertension; pulse pressure is normal.

Gastro-intestinal crises infrequent.

TREATMENT

Surgical.

Removal of foci of infection.

Removal of the adenoma if a single large one is present.

Subtotal thyroidectomy.

Medical management frequently not satisfactory.

DIFFUSE COLLOID GOITER

Occurs during adolescence, menstrual periods and pregnancy.

Endemic.

Enlargement smooth and uniform.

Symptoms due to pressure or hypothyroidism.

No tendency to give rise to hyperthyroidism.

Prevented or cured by iodine.

Surgery never indicated.

The following simple classification should be sufficient for the average clinician. I believe it was originally suggested by Plummer. That it is open to criticism is freely admitted but it is simple and if mastered will enable the clinician to treat his patient along safe lines, avoiding iodine in all but the colloid and exophthalmic varieties.

Colloid.

Adenoma

with hyperthyroidism.

without hyperthyroidism.

Exophthalmic goiter.

Tuberculosis, syphilis, thyroiditis, malignancy.

Some may feel that the decision as to whether an adenoma is present is a matter of academic interest only. To those I should like to point out a few things in the life history of adenomatous goiter and its response to treatment.

An adenoma may and usually does develop during adolescence. The danger of its developing hyperthyroid symptoms becomes increasingly greater with advancing age. Most adenomata with hyperthyroidism have been present many years, an average of about 17, before the patient consults the surgeon.

Colloid goiters develop about the same period of life. They rarely, if ever, develop signs of hyperthyroidism.

EXOPHTHALMIC GOITER

Goiter many times absent.

Symmetrical enlargement of thyroid when a goiter is present.

Onset acute. Course definite, continuous and characterized by periods of exacerbations and remissions.

Tachycardia.

Nervousness.

Definite fine tremor.

Loss of weight and strength.

Increased appetite.

Thrill and bruit usually present.

Superior thyroid arteries frequently palpable.

Exophthalmos usually present.

No tendency to hypertension; pulse pressure low.

Gastro-intestinal crises frequent.

TREATMENT

Lugol's solution or some other form of iodine by mouth.

Removal of foci of infection.

X-ray or radium.

Ligation of thyroid arteries.

Subtotal thyroidectomy.

Medical management frequently not satisfactory.

ADENOMA WITHOUT HYPERTHYROIDISM

Occurs during adolescence, menstrual periods and pregnancy.

Endemic.

Enlargement nodular or asymmetric.

Symptoms due to pressure or hypothyroidism.

Tendency to develop hyperthyroidism after the age of 30.

Frequently made worse by iodine which often initiates hyperthyroid symptoms.

Surgery frequently indicated either as a cure or as a prophylactic against hyperthyroidism.

Iodine properly administered will prevent or cure most colloid goiters: Iodine is practically a poison to an adenomatous goiter and will convert a non-toxic adenoma into an adenoma with hyperthyroidism more promptly than any other measure. Iodine should never be given to a patient with an adenomatous goiter. Even exophthalmic goiter is benefited by iodine, at least temporarily, but iodine is always and at all times contra-indicated in adenomata.

Tables showing the chief differences between Graves' disease and adenoma with hyperthyroidism, and diffuse colloid goiter and adenoma without hyperthyroidism follow.

There should be a closed season on goiter terms and classifications during which period of eleven and one-half months out of each year it should be a finable offense for a new term or classification to be suggested and any ambitious medical man wishing to enlighten the world on this subject should be compelled first to commit to memory the existing terms and classifications and then look up in the dictionary the meaning of the various terms so used.

PROGNOSIS IN HEART DISEASE*

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In addition to diagnosing organic cardiac disease it is of paramount importance to determine as accurately as possible what bearing the condition will have on the future life of the patient. When a patient submits himself for medical examination he does so with such implicit confidence that the opinion given him may entirely alter his future life. It is regrettable that too often an irrelevant symptom or sign is misinterpreted during the appraisal of the cardiovascular system, resulting in the patient's unnecessary invalidism and great mental anguish. Many cases of cardiac neurosis are directly attributable to diagnostic error and to unwarranted medical pessimism. The converse to this, likewise, too frequently occurs and entails dangers and disaster far greater.

Intelligent prognosis is, of course, impossible without accurate diagnosis. In considering prognosis it is necessary not only to think in terms of probable life expectancy but to analyze crit-

ically all the factors which may influence the span of life, factors that are more or less direct responsibilities of the patient and his medical advisor. It is necessary to appreciate fully all the influences that may directly or indirectly affect the life expectancy of the individual patient.

FACTORS INFLUENCING LIFE EXPECTANCY

Age—The time of life at which heart disease affects the patient has an important bearing on prognosis. Cardiac infections are notoriously prevalent in younger persons, being largely limited to the first three decades of life when rheumatic fever, chorea, tonsillitis, and the acute exanthemas are common etiologic agents. In the middle and later decades a great number of patients have degenerative heart disease, such as results from exophthalmic goiter, adenomatous goiter with hyperthyroidism, hypertension and arteriosclerosis. Syphilitic cardiovascular disease is most frequently encountered in the fourth and fifth decades, owing to the fact that about nineteen years elapse from the time of the infection until the occurrence of symptoms and signs of circulatory damage.

The length of time elapsing between the initial cardiac insult and the careful investigation of the cardiovascular system and institution of a correct remedial regimen is a vital factor in determining the patient's life expectancy. In cardiology, as in all branches of medicine, the early recognition and the proper management of the disease are of vital importance.

Sex—In an analysis of 4,059 cases of organic cardiac disease in the Mayo Clinic the sex incidence was found to be equal. The general impression exists that heart disease is more prevalent among males than females. While this may be true in certain localities and among certain groups of patients, such as are observed in charity hospitals and dispensaries, it is not borne out by our statistics. It is true, however, that ordinarily the life expectancy of women with cardiac disease is greater than that of men because women, as a group, are subject to lesser occupational stresses and more readily and completely adapt themselves to their physical handicap. Cardiac infections are more prevalent among females, while degenerative cardiovascular disease is more prevalent among males.

Heredity—The rôle of heredity in cardio-

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vascular disease is a debatable question, yet one is impressed, time and again, by the striking regularity of the occurrence of degenerative circulatory diseases in certain families. The influence of environment, even in these cases, is undoubtedly important as it is not unusual for families, even after scattering, to live under similar hygienic or unhygienic conditions. The influences of occupation, and also diet, which appears in some degenerative types of heart disease, seem to be important etiologic considerations. Temperament is an agent, at least in the progress of heart disease, particularly in the hypertensive type; in many instances, it is unquestionably a heritage.

Occupation—Occupation is a vital factor in influencing prognosis, and patients with organic heart disease, whose daily routine subjects them to strenuous physical stresses and strains, do not, as a rule, have a life expectancy comparable to that of others performing light or moderate duties. It is always important for those afflicted with heart disease to obtain sedentary employment, and the responsibility for such advice belongs to the physician. It is becoming more and more difficult for patients to carry out this scheme, as competition in the sedentary fields is extremely keen, and many of the larger organizations give preference to healthy persons through the selective medium of physical examination.

Etiology or type—Life expectancy with heart disease is largely dependent on the degree and extent of the damage to the cardiac musculature and on the rate of progress of the pathologic process. Experience has shown that there is a very wide range of mortality between the different types of cardiac disease. Prognosis depends mainly on the etiologic factor, since the degenerative types of cardiac disease as a group carry the highest mortality, due to the fact that they occur in older persons, that the cardiac lesion is so frequently but a part of a more or less generalized pathologic process, and that the underlying disease is progressive. This is particularly true of the hypertensive and arteriosclerotic types of heart disease.

INFECTIONS

Endocardial valvular disease—Under this heading may be included 1 chronic, 2 acute and 3 subacute endocarditis.

1. Chronic endocarditis in most instances is attributable to the virus producing rheumatic fever. The prognosis in the initial attack is usually good except in very young children and infants. The ultimate outlook depends, in a large measure, on the extent of the cardiac damage, that is, the degree of associated myocardial and pericardial involvement, and on the care exercised in the patient's subsequent management. The type of valvular lesion has a definite bearing on prognosis, and experience has shown that aortic insufficiency and mitral stenosis are the most significant lesions. Both deformities markedly increase the work of the heart and both tend to be progressive. Mitral insufficiency, unless associated with extensive damage to the heart muscle, is relatively harmless.

Deductions regarding prognosis in heart disease are greatly aided by mortality studies of large groups of similar types. In applying the data based on such statistics one must not apply too rigorously the group average to the individual patient.

In a study of 296 cases of non-syphilitic aortic insufficiency, Willis and Fitzpatrick found that 39 per cent. of the patients had died from heart disease, an average of fifteen and seven-tenths months after examination. In a similar study³⁹ of 470 cases of mitral stenosis the cardiac mortality was 37 per cent. for the same average period after examination. From these figures it is apparent that, as a group, aortic insufficiency and mitral stenosis have about the same significance.

2. Acute bacterial endocarditis, due to *Streptococcus hemolyticus*, the pneumococcus, staphylococcus, or the gonococcus, is invariably fatal within from three to five weeks, and is as a rule but an incident in a generalized infectious process.

3. Subacute bacterial endocarditis, in most instances due to *Streptococcus viridans*, is likewise invariably fatal^{6 20 21 26 31}. However, the course of the disease is more protracted, although it rarely lasts more than ten or eleven months. Occasionally, a patient spontaneously becomes bacteria-free, but even under this condition death often occurs from glomerulonephritis, progressive anemia, or heart failure¹⁹.

Myocarditis—In the correct sense of the term, myocarditis is a relatively rare condition except as it occurs with endocarditis. Under the

name myocarditis are included only those diseases of the heart muscle that are directly the result of bacterial invasion. The prognosis here again depends largely on the degree and extent of the muscle damage, and on the virulence and the persistence of the infecting organism. I have observed a small group of cases of focal myocarditis associated with subacute polyarthritides in which there was an early and high cardiac mortality.

Pericarditis—The significance of pericarditis depends chiefly on the infecting organism, its virulence, and the degree and extent of damage not only to the pericardium, but also to the other cardiac structures. The condition may be classified under 1, fibrinous; 2, rheumatic; 3, purulent, and 4, adherent.

1. As a rule little cardiac handicap results from a simple fibrinous pericarditis and, unless the inflammatory process is recurrent with considerable resulting deformity, the prognosis is good. When effusion occurs the seriousness of the situation is dependent not on the fluid but on the infecting organism.

2. The pericardial involvement resulting from rheumatic fever is usually but a part of a pancarditis and, as the result of the extensive associated cardiac damage, is attended by a rather high mortality.

3. Purulent pericarditis is usually rapidly fatal, and is as a rule but a manifestation of a severe generalized infection. It may, however, arise by extension from a contiguous focus of suppuration within the thorax, such as empyema.

4. The prognosis in adherent pericarditis depends largely on the type. If the adherent pericardium is associated with rheumatic endocarditis and myocarditis, the outlook is usually grave, but if the pericardium alone is diseased, by extension of an inflammatory process in the mediastinum, lung or pleura, the prospect is more favorable unless adhesions to the surrounding structures are so extensive as to lead to marked cardiac embarrassment and ultimately to heart failure.

Cardiovascular syphilis—The early recognition of syphilis and its proper treatment are of prime importance in cardiovascular syphilis. In the early stage the lesion is limited to the outer layers of the aorta,¹⁷ but when invasion of the media occurs, the disease process is often beyond control. The inflammatory reaction of syphilis, be-

ing productive, soon leads to a reparative fibrosis producing deformities which have a profound effect on the cardiovascular mechanism. Notable among these cicatricial changes are those which involve the aortic valve leaflets or ring, causing aortic insufficiency, and those which produce occlusion of the coronary orifices and thereby hamper the nutrition of the heart. It is probable that actual myocardial changes have occurred in all moderately advanced and advanced cases.^{8 32}

The prognosis in the early stage of cardiovascular syphilis is reasonably good provided adequate and persistent treatment is instituted early. In the later stages, the outlook is uniformly grave, as progressive cardiac insufficiency invariably occurs, even in spite of rigid treatment. In a recent study of 140 cases of syphilitic aortitis covering a period of eight years, Willius and Barnes found that no cardiac deaths had occurred among patients with early involvement. When the disease was moderately advanced, 11 per cent. died, an average of fifteen months after examination, and when the disease was advanced, 48 per cent. died, an average of fourteen months afterward. In a study of 167 cases of syphilitic aortic insufficiency it was found that the cardiac mortality was 46 per cent., an average of fifteen and six-tenths months after examination, a mortality slightly higher than in the non-syphilitic type. Longcope's series revealed a mortality of nearly 70 per cent. within two years.

DEGENERATIVE DISEASES

Arteriosclerotic cardiac disease—The arteriosclerotic type is probably one of the most frequently observed of the degenerative cardiac diseases. It results fundamentally from degenerative changes in the coronary tree, involving either the larger branches or the minute terminals. Angina pectoris occurs in about one-fourth of the cases and undoubtedly marks the most serious form of the disease.

The early manifestations of angina pectoris are too often considered insignificant by the physician because the objective examination of the heart reveals little or no evidence of organic disease, and therefore the patient is allowed to carry on his regular routine. The onset of retrosternal pain or discomfort with relation to cardiac overload in middle or later life should

always be considered an ominous sign until positively proved otherwise. Hay says, "Prognosis is often at fault because the significance of the slight and early manifestations is misinterpreted. These minor anginas have certain characteristics which should enable them to be recognized for what they are, symptoms often unobtrusive, yet significant, and only yielding up their secret to careful cross-examination. They may be compared to a gesture, slight but ominous, and full of menace." In an analysis of 154 cases of angina pectoris extending over a period of five and one-half years the cardiac mortality was found to be 47 per cent.³⁷

Acute occlusion of a coronary branch by thrombosis is one of the most serious catastrophies in cardiology and is possible in any case of coronary disease. The immediate mortality is exceedingly high,^{2 9 15 33} although occasionally the patient temporarily survives the attack.¹ Cases of coronary disease without anginal attacks invariably develop a progressive myocardial failure, the prognosis being rendered unfavorable by the progressive tendency of the disease.

Hypertensive cardiac disease—The chief effect of hypertension on the heart is to cause myocardial hypertrophy, particularly of the left ventricle, due to increased work. As hypertrophy increases and dilatation occurs, following prolonged cardiac strain, degenerative changes in the myocardium occur. Coincidental or associated arteriosclerotic processes further increase the damage to the musculature.

Norris, among others, has emphasized the prognostic importance of high diastolic readings. He quotes extensive life insurance statistics which set the upper limit of normality at 94 mm. and show that an increase of from 25 to 34 mm. doubles, and of 50 mm. or more quadruples the death rate. Norris further emphasized the contention that abnormally low blood pressure favors longevity unless a previous hypertension has existed.

In a recent analysis of 311 cases of hypertension extending over a period of eight years, the following was elicited: 44 per cent. of the patients had outstanding cardiac disease; of these 34 per cent. died from cardiac disease, 4 per cent. from renal insufficiency, and 9 per cent. from cerebral accidents. In contrast to these patients were those without evident cardiac damage, the cardiac mortality being 4 per cent., renal mortality 5

per cent., and cerebral mortality 2 per cent.

Myocardial degeneration associated with exophthalmic goiter and adenomatous goiter with hyperthyroidism—The heart in both exophthalmic goiter and adenomatous goiter with hyperthyroidism is subjected to increased work as a result of the elevation of the basal metabolic rate. In exophthalmic goiter an additional factor, the alteration that usually occurs in the thyroxin molecule, probably plays a part in the production of myocardial damage. Irreparable cardiac damage in both thyroid disorders is unusual except in cases that have been allowed to pursue a protracted course, a fact emphasized by Willius, Boothby and Wilson^{43 44}. The favorable prognosis that can usually be made in these forms of cardiac disease is attributable to the fact that the thyroid disease is amenable to cure by surgery.

PHYSICAL SIGNS

Condition and size of the heart—The condition of the heart as elicited by careful physical examination gives very important data regarding prognosis. The degree of efficiency and integrity of the heart invaded by disease is directly dependent on the condition of the myocardium. The size of the heart is a very important prognostic sign, for marked enlargement, particularly when dilatation exceeds hypertrophy, frequently ushers in severe heart failure.

Murmurs—Murmurs are important signs in the diagnosis of lesion types, but do not deserve the emphasis that they have received in the past. It is not so long since the presence of a murmur was considered a sufficient reason, regardless of its character, time, or location, for diagnosing organic heart disease. Murmurs are frequently evanescent, particularly those accompanying marked degrees of anemia and the increase in the rate of circulation seen in hyperthyroidism, pyrexia, and so forth. The murmurs that today are recognized as being of greatest importance are those of mitral stenosis and aortic insufficiency. The murmurs themselves do not, of course, augment the lesion, but, when considered in conjunction with other symptoms and signs, they do throw light on the condition of the myocardium.

Gallop-rhythm and heart tones—Gallop-rhythm, and heart tones that are distant and lack definition and differentiation are important

signs, for they indicate a marked degree of myocardial fatigue.

Cardiac arrhythmia—Cardiac arrhythmia in itself does not necessarily increase the seriousness of the prognosis, but it often occurs when heart disease is well advanced. This is true of auricular fibrillation, one of the most common and important of the disorders of rhythm. In a group of 500 patients with auricular fibrillation at the Mayo Clinic³⁶ it was found that 41 per cent. had died from heart disease an average of fifteen months after examination. White in a study of 100 cases of auricular fibrillation found the cardiac mortality to be 48 per cent. MacIlwaine and Campbell report a mortality of 68 per cent. in patients twelve months after they had been observed in the Royal Victoria Hospital in Belfast. Pardee attributes the high mortality not to the arrhythmia, but largely to the omission of treatment immediately after recovery from an attack of acute heart failure.

Premature contractions—Premature contractions themselves do not affect prognosis except as they occur in conjunction with serious disease of the heart. They are common in perfectly normal hearts. Statistical studies of premature contractions may be very misleading, and one must bear in mind the actual type of cases that form the basis of the analysis. Recently Barker, in a study of 193 hospital cases with premature contractions, reported a mortality of 15 to 20 per cent. in cases without apparent cardiac damage, whereas in those with demonstrable cardiac disease, the mortality was 38 per cent. In both groups the premature contractions of auricular origin were attended by a high death rate.

Pulsus alternans—Pulsus alternans is always a very grave prognostic sign and is usually soon followed by death. Seventy-four per cent. of White's series of patients died within a period of three years.

Complete heart-block—The prognosis with complete heart-block is as a rule unfavorable, particularly when associated with Adams-Stokes' attacks. White and Viko found a cardiac mortality of 50 per cent. in a group of twenty-four cases observed over a period of from one to seven years. Seven patients died within a year after the discovery of the complete block. In a series of thirty-seven cases at the Mayo Clinic,

the cardiac mortality was 68 per cent., an average of seven months after examination⁴⁰. In five instances death is definitely known to have occurred during the Adams-Stokes' attacks. Of the patients with Adams-Stokes' attacks 73 per cent. have died from heart disease.

Paroxysmal tachycardia—The prognosis of paroxysmal tachycardia depends chiefly on the type of tachycardia, and on the degree of the underlying cardiac damage. This has been quite clearly brought out in a study of a group of 102 patients with paroxysmal tachycardia.⁴ The cardiac mortality for a period of eight years was 24 per cent. When there were minimal or no cardiac findings only 10 per cent. died of heart disease. The greatest proportionate death rate occurred with auricular flutter. A general discussion on prognosis in the tachycardias is presented by McLester, but no statistics are given.

ELECTROCARDIOGRAPHIC STUDIES

Electrocardiographic studies have revealed data of great prognostic importance not determinable by other means. This is particularly true of T-wave negativity in certain derivations of the electrocardiogram, and of aberration of the QRS complexes affecting all derivations.

T-wave negativity—Four hundred forty-nine cases³⁸ of T-wave negativity were analyzed at the Mayo Clinic. In 146 cases in which T-wave negativity occurred in Derivation I, the cardiac mortality was 63 per cent. in an average of eight and one-half months. This group comprised cases of hypertensive cardiac disease, chronic myocarditis, arteriosclerotic cardiac disease, angina pectoris, myocardial degeneration with exophthalmic goiter, adenomatous goiter with hyperthyroidism, chronic endocardial valvular disease with mitral insufficiency, mitral stenosis, aortic insufficiency and aortic stenosis. A control group of identical cases with normal electrocardiograms revealed a cardiac mortality of 37 per cent. in an average of twenty-eight and eight-tenths months.

In sixty-three cases with T-wave negativity in Derivations I and II the cardiac mortality was 65 per cent. in an average of twelve and seven-tenths months. This group comprised cases of hypertensive cardiac disease, chronic myocarditis, arteriosclerotic cardiac disease, angina pectoris, exophthalmic goiter, adenomatous goiter with hyperthyroidism, and chronic

endocardial valvular disease with mitral and aortic regurgitation. The control group of identical cases with normal electrocardiograms showed a cardiac mortality of only 18 per cent. in an average of ten and eight-tenths months.

One hundred eighty-nine cases with T-wave negativity in Derivations II and III were studied, and the cardiac mortality was found to be 32 per cent. in an average of eleven months. This group, besides the types enumerated in the preceding groups, also included cases of syphilitic aortitis and congenital heart disease. The cardiac mortality of the control group was 20 per cent. in an average of eighteen months.

In fifty-one cases in which T-wave negativity occurred in all derivations, the cardiac mortality was 63 per cent. in an average of twelve and seven-tenths months. This group was composed of types of cases similar to the foregoing. The cardiac mortality of the control group was 21 per cent. in an average of nineteen and two-tenths months.

There is no clinical clue that enables the differentiation of cases with significant T-wave negativity from those without, and yet the difference that exists between the life expectancy of the two groups is so great as to emphasize clearly the prognostic importance of this line of investigation.

Aberrant QRS complexes in all derivations—In an analysis of 112 cases with aberrant QRS complexes in all derivations, the cardiac mortality was found to be 63 per cent. in an average of fourteen and two-tenths months. This group comprised cases of hypertensive cardiac disease, chronic myocarditis, arteriosclerotic cardiac disease, angina pectoris, exophthalmic goiter, adenomatous goiter with hyperthyroidism, and chronic endocardial valvular disease with mitral insufficiency, mitral stenosis, aortic insufficiency, and aortic stenosis. The control series in contrast revealed a cardiac mortality of 22 per cent. in an average of thirteen and seven-tenths months.

Significant T-wave negativity and aberrant QRS complexes in all derivations—When the foregoing abnormalities coexisted a far greater cardiac mortality occurred. The total group comprised 135 cases, and revealed a cardiac mortality of 87 per cent. in an average of twelve

and seven-tenths months, as compared with 26 per cent. in thirteen and nine-tenths months, the mortality of the control group.

In a similar study of T-wave negativity, McIlwaine and Campbell found cardiac mortality averages considerably higher than in my studies. The value of this graphic method in prognosis has been emphasized by others^{7 25 28 29}.

The importance of the foregoing electrocardiographic abnormalities as prognostic signs is clearly shown in comparative studies. In cases of angina pectoris the cardiac mortality of the whole group was 47 per cent. In cases of significant T-wave negativity the death rate was 70 per cent. and in those with aberration of the QRS complex in all derivations, 63 per cent³⁷. Hay's figures in comparable cases were similar to mine.

In cases of mitral stenosis the cardiac mortality of the complete group was 37 per cent., while in cases with significant T-wave negativity, the mortality was 63 per cent³⁹.

The cardiac death rate in cases of non-syphilitic aortic insufficiency in the complete group was 39 per cent., contrasted to a rate of 50 per cent. in cases with significant T-wave negativity. Aberration of the QRS complexes in all derivations revealed a still greater mortality, 86 per cent⁴². The same is true of the syphilitic type, in which the total group mortality was 46 per cent., and in cases with T-wave negativity it was 88 per cent⁴².

Focal infection—There is little question but that foci of chronic infection frequently enhance the progress of organic cardiac disease, particularly in the infectious type. Emphasis must be especially placed on the removal of foci early in the course of cardiovascular diseases.

TREATMENT

Prognosis in a large majority of cases is dependent on the adequate management of the patient. This must always be made an individual problem, for the cardiac status of similar types of disease varies greatly. There is little question but that the life expectancy of many patients can be distinctly increased by the institution and the maintenance of a proper regimen. This is not fully appreciated, and only too often little attention is given a patient after

he has temporarily recovered from an acute cardiac decompensation.

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HYPERTONIC GLUCOSE SOLUTION IN THE TREATMENT OF SYPHILIS

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The many notable failures encountered still today in the treatment of syphilis are generally supposed to be due, principally, to the inability of our specifics to reach the causative organisms. But just why this should be the case is, unfortunately, not quite clear. An attempt is, therefore, made to throw some light upon these conditions and to suggest the means to overcome the obstacles.

In pursuance of this subject it is necessary, first of all, to consider certain features of those pathological changes that are caused in the tissues by the syphilitic infection. Only the proper evaluation of the underlying pathological basis enables us to recognize the true nature of the obstacles which obstruct our path to a more successful treatment and qualifies us to devise the means to intelligently direct our efforts into the proper channels. However, for the sake of perspicuity, all unnecessary details shall be omitted and only such pathological data be presented that are absolutely necessary to master the situation.

For our present purpose the syphilitic reactions may be divided into two classes: cellular and non-cellular. The cellular reactions occur in tissues that respond freely to the settlement of the organisms. They are the same whether they occur in primary, secondary or tertiary lesions and consist of a collection of lymphocytes and plasma cells with a more or less conspicuous sprinkling of fibroblasts.¹ While they accumulate, there takes place a proliferation of the sessile cells forming the walls of the vessels included in the sphere of reaction. What concerns us here most is the fact that the accumulation of these cells and their subsequent changes gradually lead to a

characteristic obliteration of the vessels, so that the circulation and permeation of the affected tissues become more and more impeded.

The non-cellular reactions occur principally in tissues that respond but little to the stimulus of infection. They present an entirely different picture. The cellular elements are practically wanting. Their principal feature is an edematous infiltration which forms around, and envelops, the infesting treponemata.

While the tendency to substitute scar tissue for whatever body elements have been destroyed is pronounced at the site of cellular reactions, it is comparatively slight at the side of edematous infiltrations. Edematous reactions may, therefore, persist without much change for an indefinite length of time. They frequently exist side by side with cellular reactions and have been found by numerous investigators all the way from the first² to the last,³ the gummatous, stages of syphilis.

Due to the obstruction of the circulation and the diminished permeability of the tissues both kinds of reactions create conditions which make it difficult, if not impossible, for our remedies to reach the treponemata. It is, however, a happy fact that, for reasons stated elsewhere,¹ the invaders gradually disappear from the side of cellular reactions, so that these places later on usually are found free, or almost free, from organisms. The opposite is true in regard to the edematous infiltrations. Here the treponemata remain alive and multiply undisturbed. Sheltered and protected by the surrounding stagnating fluid their number is frequently appalling, even in cases that have been subjected to the most intensive treatment for years.

There are good and obvious reasons for the tenacious perseverance of the treponemata within these edematous infiltrations. From the very beginning the edema acts as a mechanical barrier against adverse influences directed against the organisms by keeping the specific defensive ferments, elaborated by the host, in abeyance in consequence of the impeded circulation. By and by, however, as time goes on the nature of this, at first, only "passive" protection changes. Wherever microbes settle digestive split products form and accumulate in the surrounding fluid. Whether these split products originate from the host's own tissues in consequence of the destruction wrought by the microbes or from the disin-

tegration of dead microbes themselves — they destroy, or fix, complement. In this way, the previously passive protection assumes gradually an "active" character. Complement, without which ferments cannot work, is fixed at the outskirts of these zones, as soon as it arrives with the blood stream, so that ferments, should they attain the treponemata, are inhibited in their action and perfectly harmless to the enemy. Such edematous zones I have elsewhere⁴ designated "zones of inhibition." When fully developed, they constitute a veritable fortress, from which the treponemata cannot be dislodged, neither by the defensive mechanism of the body nor by the ordinary treatment, even if it is persistent and intensive.

To reach these microbes and to make them accessible to our remedies we must, first, drain the edematous fluid and destroy the fortress. It is for this purpose that the hypertonic glucose solution, intravenously applied, is recommended in the treatment of syphilis.

Intravenous sugar solutions were first introduced as a therapeutic measure by Buedingen, of Constanz. Soon a number of other physicians followed his example and tried these intravenous injections for the alleviation and cure of various ailments and with varying success. Among the advantages they claim are: increase of the bactericidal action of the drugs employed, support of the heart action and cell activation in the sense of Weichardt. We will here pay no further attention to these various claims and confine our efforts to stress only one feature which has been studied best and is mentioned by all: the drainage of the tissues towards the blood stream.

The drainage of the tissues by sugar solutions intravenously applied has been carefully studied experimentally by Van der Velden, Stejskal,⁵ Pranter,⁶ Latzel and Stejskal⁷, and others. Clinically it is most conspicuous in the case of acute and chronic edematous skin afflictions, as it is readily visible to the naked eye.⁸ It is, however, equally prominent in edematous conditions of the inner organs. Thus, Elinger, for instance, observed that in rabbits edema of the lungs can be drained in this way. Even in the eye, in which drainage is most difficult, Lauber⁹ saw edema of the papilla nervi optici and other exudative conditions of the inner and outer structures vanish promptly after sugar injections.

Also in the case of syphilis good results are obtained by the intravenous application of sugar.

Silberstein¹⁰ observed that the treponemata disappeared from syphilitic lesions in 6 to 16 hours after the injection of 0.2 Neoarsphenamine if reinforced by sugar; while the treponemata were still present 24 hours and later after an injection of 0.4 Neoarsphenamine without the addition of sugar. He claims the remarkable results to be due to an activation of arsphenamine by the sugar. It is, however, difficult to reconcile this explanation with the fact that, as Silberstein adds, the increase of the efficacy of arsphenamine by the sugar does not hold good if larger doses of the drug are employed. We must, therefore, take recourse to another, more feasible, explanation, namely, that the increase of the efficacy of arsphenamine in the smaller dose is due to the drainage of the lesions by the sugar and the more ready attainment of the treponemata by the arsenical. The drainage in consequence of the addition of sugar being the same irrespective of the dose of arsphenamine administered, the lack of a proportionate increase of efficacy with larger doses of this drug is readily explained. Furthermore, the statement that the better results achieved by the addition of sugar are due to the hypertonicity of the solution and its consequent drainage is also supported by the fact that 20% hypertonic solution of salt accomplish similar results, though they are not so good.¹⁰

Of great interest is the influence of the sugar upon the Wassermann reaction. As the positive Wassermann reaction is due to the presence in the blood of digestive split products of killed treponemata; and as the drainage of "zones of inhibition" leads to a better accessibility and an increased destruction of these invaders and, thus, to an increase of these specific digestive split products—it is theoretically to be expected that the Wassermann reaction in its positive phase grows stronger by the addition of sugar to the injected solution. Practical experience has proved this expectation to be correct: a former negative reaction becomes more readily positive, and a former positive reaction increases in intensity if sugar is added. For the same reason it is but natural that in the case of large "zones of inhibition," which can at best only partially be drained at each injection, the Wassermann reaction may occasionally even remain positive longer, as treponemata and their digestive split products continue to be thrown into the circulation until the entire edematous zone has been

drained and all of the specific organisms contained therein have been removed and disposed of.

In the latter instance, it is assumed that large edematous zones do not refill the drained areas between injections. If this happens, our efforts are set at naught and the results obtained with sugar are either curtailed or lost entirely. To prevent this misfortune, we must counteract those conditions which cause edematous fluid to collect.

The investigations of Victor C. Vaughan¹¹ and of Martin H. Fischer¹² give us the key to the solution of this problem. Vaughan found that all proteins form during their disintegration split products of acid reaction. When, therefore, treponemata or tissue cells die and disintegrate at the place of microbial settlements favorable to the development of edema, enough acid split products gradually accumulate to lead to a local acidosis of the surrounding tissues. It is this local acidosis that, as Fischer has shown, causes the tissues involved to swell and brings about those edematous infiltrations that gradually develop into "zones of inhibition." To prevent, therefore, the refilling of drained areas, it is but necessary to neutralize the acidity of the local tissues by the proper administration of alkali.

There are during the course of syphilis three clinical conditions in which the draining power of sugar solutions intravenously applied seems to offer special advantages.

There is, first, the involvement of the central nervous system. The difficulty to influence favorably this serious complication by the ordinary intravenous medication is too well known to require emphasis. Attempts have, therefore, been made to drain the cerebro-spinal fluid into the circulation by hypertonic salt solutions and to force a larger quantity of the drug into the cerebro-spinal canal during the return flow. The study of these attempts made here¹³ and abroad throw sufficient light upon the mechanism of this therapeutic measure to explain the superior accomplishments achieved with hypertonic sugar solutions in various syphilitic afflictions of the central nervous system.⁶

Then, there is, second, the provocative injection of arsphenamine to aid the diagnosis of latent syphilis. Also here the injection of the drug alone has not proved to be very satisfactory, as the specific organisms located in edematous

zones are rarely reached. With these zones drained by the addition of sugar to the injected solution and the organisms thus exposed to the action of the drug, the prospects to make the Wassermann reaction positive in latent cases are much better. Whether it is sufficient to inject the sugar but once together with the drug, or if it is better to make one or several injections of sugar before the administration of the drug, remains to be seen.

Finally, there is, third, the treatment of primary syphilis. Zurhelle⁴ has shown that, for instance in lymphatic glands, edematous infiltrations may develop very early in the course of syphilis. Wherever this happens, the chances for a definite cure are decidedly diminished if only the ordinary solutions are used. If we add to this the further fact that Silberstein¹⁰ was able to save twice as many experimentally with trepanosomes infected animals with arsphenamine plus sugar than with the drug alone—it seems that the peculiar and unquestionable benefits derived from the simple and perfectly harmless addition of sugar should not be denied these early cases. By preventing the fatal formation of edematous zones or draining those already developed, much is added to the future safety of these patients.

Glucose solutions are well borne and well utilized by the body. Thirty mls of a 50% solution, containing 15 grams of chemically pure anhydrous glucose, are generally used for the purpose. Untoward effects have never been observed. Though the glucose disappears from the blood in thirty minutes, the drainage continues for 20 hours.

In cases of syphilis in which the intravenous route of medication is not used, it would be of great advantage if the same drainage exhibited by sugar solutions intravenously employed could also be accomplished with sugar solution given by mouth. I have made some seemingly favorable tests in this direction, but their number is too small to justify any definite statements at this time.

CONCLUSIONS

From a therapeutic standpoint the reactions of the tissues to syphilitic infection may be divided into two classes: cellular and non-cellular. In the sphere of cellular reactions Nature succeeds in disposing of the invader, so that these

places usually are found free, or almost free, from treponemata. In the sphere of non-cellular reactions the opposite is true. Here an edematous fluid surrounds and protects the developing colonies of treponemata, so that their number is frequently appalling.

To reach these treponemata and make them accessible to our remedies, we must, first, drain the edematous regions. This object can be accomplished by hypertonic glucose solutions intravenously applied.

The ability of these hypertonic solutions to drain the fluids of the tissues into the blood stream has been fully established experimentally and clinically. However, to attain the desired end and to get the fullest possible benefit from them they must be applied intelligently and persistently and be supported by a proper administration of alkali.

If this is done, hypertonic glucose solutions applied in support of the ordinary specific treatment of syphilis decidedly brighten the prospects especially:

1. If the central nervous system is involved.
2. In provocative injections.
3. In the treatment of primary syphilis.

They promise a complete cure in many instances in which it was not possible in the past.

Thirty mls of a 50% solution, containing 15 grams of chemically pure anhydrous glucose, are usually used. If the ingestion of sugar can accomplish the same results as its intravenous application remains to be seen.

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MEDICAL TREATMENT OF EMPYEMA WITH SPECIAL REFERENCE TO CHEMOTHERAPY*

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Interest in diseases, like interest in art, literature and public affairs, runs in certain definite cycles. A few years ago following the discovery of salvarsan, interest was focused upon syphilis in a way it never had been before. During the past two years as the result of the discovery and the use of insulin, the study of that ancient and almost prosaic disease diabetes mellitus, has excited and thrilled the entire medical world. Certain infectious diseases such as influenza, because they appear in an epidemic and periodic manner, produce definite recurring cycles of interest. After this interest has abated somewhat, we can then look back and appraise the results of this period of intensive study.

During the World War physicians had an unusual opportunity of studying medical problems. Problems of nutrition involving large armies or even the entire population of certain countries demanded accurate and immediate solution. Certain infectious diseases, notably typhus, influenza, pneumonia and meningitis, were seen in such numbers as probably will never be seen again by the physicians of this generation.

At this time an old and somewhat commonplace disease, empyema, forced its unwelcome attention upon the medical profession. Before the war the average physician had not had any very great experience with empyema. The occasional case that wandered into his practice was diagnosed by the aspiration of a small quantity of pus, turned over to the surgeon and operated upon. Some recovered, some died, and the mortality rate was largely a matter of interest to the surgeon. Many cases of neglected empyema also appeared at clinics from time to time—neglected because the study of empyema itself had been neglected.

The treatment of influenzal empyema by the dictum of "when you find pus resect a rib" was followed by an appalling mortality. The mortality rate of 84 per cent at Camp Funston and of 65 per cent at Camp Wheeler emphasized the dangers of early operation in empyema, and

made many physicians wonder if we were not dealing with an entirely new type.

While the very high mortality rate observed in the army camps was due in part to the severity of the infection, yet previous studies had already shown that empyema was anything but a benign condition. Moschowitz, who studied the cases in Mt. Sinai Hospital in New York, from the period 1904 to 1914, found an average mortality of 28 per cent. He collected further statistics which show that the death rate in empyema before the two great influenza epidemics varied from 18.9 per cent (Lilienthal) to 55 per cent (Lavrow). These statistics prove the great seriousness of empyema, in the decade preceding the influenza epidemic.

The disastrous results of early operation in influenza empyema, which were so uniformly noted, constitute the most important single observation on this subject. And conversely the marked improvement in the mortality rate following delayed operation in these cases, remains the most important therapeutic lesson learned in regard to this disease.

At the time the value of delayed operation was coming to be gradually appreciated, several observers introduced less radical methods of treatment. Mozingo irrigated the chest with Dakin's solution through a catheter and obtained excellent results. Manson treated 43 patients by repeated irrigation with chlorinated soda through a catheter. All of his patients were cured by this method and no secondary operation was necessary.

During the influenza epidemic of 1919 and 1920 forty cases of influenza empyema came under my observation. In most of these cases the empyema appeared within four or five days after the onset of the pneumonia and frequently even earlier. The fluid at first was fibropurulent but rapidly, often within twenty-four hours, became frankly purulent. Because of the evident co-existing bronchopneumonia, early operation was not attempted. The alternative presented itself of either merely waiting until operation seemed safe or trying in some way to influence favorably the course of the empyema.

Since the investigations of Churchman had shown that gentian violet has a marked bacteriostatic effect upon Gram positive organisms, and as we were dealing with a streptococci and a

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pneumococcic infection, we began treating these cases with instillations of gentian violet.

The technique of this treatment was very simple. The chest was first aspirated with a needle, all the fluid possible withdrawn and then 100 c. c. of an aqueous solution of gentian violet was introduced into the chest and allowed to remain there. We began at first with a very dilute solution 1:5000 and in the succeeding injections increased the strength rapidly to 1:1000.

The results of this treatment were very encouraging. Twenty-seven patients were treated by this method and fourteen or more than one-half cleared up completely and no subsequent operation was performed. In eight patients the treatment was only partially successful, later operation being necessary. Five patients whose empyema was complicated by a co-existing bronchopneumonia did not respond to this treatment and died.

In most of the cases where a later operation was necessary, we felt that operative procedure had been simplified by this treatment. I remember one patient particularly, who was desperately ill with a bilateral empyema, whose respirations often were as rapid as eighty per minute, and who, it seemed, could not possibly recover. Under the gentian violet treatment the empyema on one side cleared up completely so that a later operation on the other side was carried out with no risk. This patient made a complete recovery.

This experience during the influenza epidemic suggested a further trial of this method in empyema associated with the usual lobar pneumonia or bronchopneumonia. We hoped that perhaps empyema produced by the less virulent pneumococcus and occurring apart from such an appalling epidemic, would give us even better results.

A short time after the influenza epidemic I saw a case of empyema associated with pulmonary tuberculosis. The patient was acutely ill, had a high fever and the aspirated fluid showed a pure culture of staphylococcus aureus. This patient was treated with gentian violet, and following a single instillation of a 1:5000 solution, the pleural fluid became sterile on culture and remained so. Soon after this observation, Waters, of the Loomis Sanitarium, reported two cases of tuberculosis empyema treated with gentian violet. The fluid of these patients showed

staphylococci and pneumococci both of which disappeared following treatment. I have recently treated by this method two additional cases of tuberculosis empyema who showed staphylococcus aureus in the pleural fluid. In both instances the fluid became sterile on culture but both patients unfortunately had a marked pyopneumothorax with collapse and carnification of the lung, and subsequently died. While this treatment in many cases of tuberculous empyema did not produce a cure, it did apparently prolong life and what is particularly striking, it demonstrated the marked bactericidal or bacteriostatic effect of the dye.

In 1922 my colleague, Dr. Robert C. Davis, treated eighteen cases of empyema with gentian violet. Fifteen of his cases were in the sero-purulent and three in the encapsulated stage, and all but one were caused by the pneumococcus, the exception being a case of streptococcic empyema. All of his patients recovered without rib resection. His results were much better than in my earlier series, due, I believe, to the fact that treatment in his patients was instituted earlier and also because his cases were mostly of pneumococcic infection and not of the virulent streptococcic type I had encountered.

During the past two years Dr. Davis and I have continued our studies on this subject. Empyema has not been so prevalent as during the influenza epidemic and it has also appeared in a less virulent form. Our results have been on the whole very good but there have also been a few failures. A summary of all of our cases shows that fifty-seven patients with empyema have been treated with gentian violet. Forty-five cleared up completely and twelve were operated upon. In all of the failures treatment was not instituted in an early stage, and this, we believe, was in part the cause of the poor results. In some instances this delay in treatment was because the condition was not diagnosed sooner. In others, the treatment was not suggested until the empyema had been present for some time and other forms of medical treatment, including frequent aspiration and irrigation with Dakin's solution, had failed.

We cannot emphasize too strongly that this treatment, if it is to be successful, must be instituted early. If we wait until extensive adhesions or encapsulation have occurred, the problem becomes to a considerable extent a me-

chanical one and surgical treatment is indicated. Adhesions and encapsulation make thorough aspiration and irrigation with gentian violet very difficult. Some patients, however, even in this stage have cleared up under the gentian violet treatment but in most instances operation with a loosening up of the adhesions and drainage of the encapsulation has been necessary.

The average number of aspirations necessary in our first series of patients was fourteen. In Davis' series the number of aspirations varies in most cases from four to fourteen. In my later cases the number of aspirations has been much less, varying from three to seven.

No untoward symptoms have ever been observed following the instillation of the gentian violet. Most of the patients treated at some time have spat up some quantities of the dye. The patient should be warned in advance of this probable occurrence, or else he may be alarmed when he coughs up sputum of a deep violet color. This phenomenon shows that there is usually a connection between the pleural cavity and the bronchus and is evidence for the correctness of Moschowitz's view that empyema takes its origin from a small abscess in the pulmonary tissue which ruptures, infecting the pleural cavity and establishing communication between this cavity and the bronchus.

Gentian violet has marked advantages over most of the substances suggested for intrapleural instillation since it is practically non-irritating, non-toxic and yet highly bacteriostatic. Churchman has shown that in vitro, dilutions as high as 1 to 1,000,000 inhibit bacterial growth, and this effect is also quite marked in the pleural cavity. In one patient seen recently with a streptococcus empyema, the fluid became sterile following three instillations and in another patient with a pneumococcus empyema, the fluid was sterile after one instillation.

In our earlier cases we used a very dilute solution of 1 to 5,000 for instillation but later we have employed solutions of 1 to 500 and 1 to 350. These stronger solutions have a greater bacteriostatic effect and are apparently neither irritating nor toxic.

The question is frequently raised as to whether repeated aspirations of the pleural cavity without instillation of gentian violet would not cure empyema. In light of the experience of McCrae, and of others, it seems quite probable that

repeated aspirations alone may at times clear up an empyema. The use of gentian violet, however, we believe, hastens this process and often cures patients who would not clear up under simple aspiration alone. Since gentian violet produces no bad effects and is so highly bacteriostatic, we believe its use is indicated in such patients.

One of the most important and difficult questions to decide is when to operate if operation seems necessary. Our rule has been to give the gentian violet treatment a trial for two weeks and then if the patient is not clinically improved, if the temperature has not shown a marked and progressive fall, and if the pus is not sterile, then rib resection is indicated.

Some critics of the method have suggested that our best results are obtained in patients who do not have a thick pus and are therefore not true empyemas. This criticism, we believe, is not valid. Moschowitz has shown that in empyema there are three stages: The formative stage, the acute stage and the chronic stage, which is the stage of frank pus.

Our answer to these critics is that we treat most of our patients in the formative and in the acute stage and the majority of them are cured before the stage of frank pus is reached.

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AMERICAN PHYSICIANS AND SURGEONS IN HUNGARIAN UNIVERSITIES

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About 20 or 25 American physicians are working at present in the various clinics and hospitals in Hungary. These doctors have recognized the high standard of the Hungarian medical science and found so much new material for study, that for the next semester fifty new students are expected from the United States.

American doctors in Budapest have founded the "American Medical Association of Budapest" (Hungary) which organization has taken upon itself to acquaint those American doctors, who desire to continue their studies, with the conditions in Hungary and direct them to Budapest.

The Hungarian Physicians Post-Graduate Central Committee has placed hospitals at their disposal and is doing everything to promote co-operation.

We had occasion to have a lengthy talk on this subject with Joseph Imre, Jr., University Professor, whose wife is the daughter of one of the editors of the "Philadelphia Inquirer" and who is well acquainted with American conditions. We risked the question: "Is it perhaps the undevelopment of American hospitals and clinics or the low standard of medical instruction that brings American physicians in such large numbers to study in Europe?"

"Not at all," he answered. "Those who have had occasion to observe the young Americans preparing to be physicians ten to twelve years ago, and compare them with physicians who have graduated now, must see how greatly they have progressed. Their medical education theoretically vies with the European physicians. The medical faculty of certain universities is excellent, for instance, the University of Baltimore, Philadelphia, New York, Cornell, Columbia and Harvard in Boston.

"It really is not the theoretical but the practical education which compares to the detriment of the Americans. The explanation for this is that the hospitals individually have little "sick material," partly because the number of hospitals is so great and partly because the charity hospitals accept comparatively less patients than we do. Consequently there are not sufficient patients

compared with the large number of physicians.

"Just to mention one instance: The Wills Eye Hospital of Philadelphia, one of the best known eye hospitals, has accommodation for about 100 patients, and this hospital has a staff of eight head-physicians, independent of one another, and as many assistant physicians. You can imagine how little opportunity each physician has to get any practice in surgery.

"For the same number of patients we have one chief-physician and four or five assistant physicians.

"This is the reason why many American physicians deem it necessary to come to Europe to obtain more practical education. Until the outbreak of the war, Vienna was the assembly place of the American physicians. The good reputation of the Vienna schools lured them. Besides this, several hundred American physicians worked in Germany. They seldom came to us and when they did come, remained only a short time.

"Their interest in Hungary was aroused in the year 1909 by the successful International Medical Convention.

"This Convention so successfully arranged by Prof. Emil Grosz and Baron Solomon Müller, has been a great advantage to this country. Those who were here at that time enriched themselves with indelible impressions and have spread the good reputation of our institutions. The slowly ripening fruit of this convention is the ever growing interest of the Americans. It seems that they do not receive the education in Vienna which they did previously and it seems they still feel a certain reticence toward Germany since the war."

I enquired: "In what manner do the physicians on the Medical Faculty of the Hungarian Universities strive to satisfy American physicians?"

"Now," he answered, "we tried to solve the question by organizing. At the beginning of summer, the American Medical Association of Budapest has been organized, which gives advice to its countrymen, places them in hospitals and informs their respective institutions of the medical education of the physicians. Such an organization has been established in Vienna a long time ago, having a membership of 100 or 150. We have, I think, a membership of 25 or 30.

For national economy, cultural and political purposes, it is important that American physi-

cians feel at home with us. Therefore the Physicians Post Graduate Central Committee has organized a sub-committee, the task of which will be to select the subjects for study, and to establish a link between the foreign physicians and the staff of the clinics.

"So far, only the Budapest University has accepted these visitors, but just as soon as we have conquered the difficulties connected with the organizing, these courses will be started in the University of Pécz, and we hope in the Universities of SZEGED and DEBRECEN. Our position is facilitated by the fact that Louis Tóth, Secretary of State, who is the President of the Physicians Post-Graduate Central Committee is very much in favor of this idea."

After obtaining this valuable information from Joseph Imre, Jr., I visited Dr. M. A. Werner at the Gellert Hotel, who is the President of the newly organized Budapest American Medical Association.

When I acquainted him with the purpose of my visit he said: "It is just by chance that I came to Budapest. I worked in Vienna until one of my colleagues praised the Hungarian medical institutions and invited me to visit Budapest. Upon this invitation I came here and have been here ever since. Now I am working at the Verbély Clinic. I can say, although I am acquainted with every well known medical institution of Europe, that the Verbély Clinic, in an educational way, has no equal in the entire world. Just think, operations are performed on four tables, whereas in the largest European clinics, operations are performed only on two tables at the most. How many cases and how much opportunity for study.

"When I came here I had to run about for a month before I was able to find a place. This condition is naturally unbearable and in order to put a stop to this, we organized as at present. I am the president, Mr. Horton vice-president, Mr. Fritz secretary, Mr. Roland Grausman financial secretary. We immediately got into touch with the Physicians Post-Graduate Central Committee, which fulfilled almost all of our wishes and requests."

He then showed us a communication of the

Physicians Post-Graduate Central Committee, the most important points of which were the following:

There will be courses in English and German.

All clinics gladly open their doors to American physicians.

The head physician will treat the physicians as their equal.

The fee for the three month course is \$100 per month.

The group instruction for not more than five persons, extending over a period of 6-8 weeks is 500 dollars, or if those attending are less than five, 400 dollars.

The Central Committee appointed a sub-committee which will furnish all the information. The sub-committee will begin its activity during the first part of September.

Vienna, according to Dr. Werner, has an income of \$1,000,000 a year from American physicians. I am convinced that the American physicians visiting in Budapest will mean considerable profit to Budapest. We gladly sacrifice, if they give us opportunity for study.

"It is necessary, however, that we give our American colleagues, who are not all millionaires, reliable information as to local expenses here. For instance, it must not happen that a course for which the fee has been established at \$100 per month should be raised to \$120 the following month. I am convinced that within a short time at least 50 American physicians will be in Budapest."

Later we changed the subject of our conversation. I found out that Dr. Werner has a fine practice in New York and that three physicians have taken over his practice during his absence. In Budapest he specializes in stomach trouble.

"In America," he stated, "a professor in medicine receives \$500 to \$1,000 for an operation. It is understood that abundance of material is what interests the profession, therefore we have to come to Europe."

(Signed) VIRÁG MIHALY.

Translated from a newspaper letter printed in a recent *Budapest News* by Prof. Elémér Horváth.

CONTUSIONS OF THE ABDOMEN — ASSOCIATED WITH VISCERAL INJURY*

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In response to the kind invitation of your committee to present before this society a short communication upon some topic which might be of interest both to the surgeon and general practitioner; I have elected to call your attention to that type of more or less severe contusion or non-penetrating trauma of the abdomen, which results in grave injury to one or more of its contained organs.

My interest in this subject dates back to my early experience as Assistant or Junior Surgeon at the Roosevelt Hospital; during which period I was assigned to the emergency service, and had the care of a rather large number of traumatic cases. As early as 1902, I had observed some twenty grave abdominal injuries, and presented to the New York Surgical Society, a short report of my experience up to that time, from which I shall quote the opening paragraph.

"Contusions of the abdominal wall and lower segment of the thorax constitute a fair proportion of the injuries received in the accident rooms of our large general hospitals. These injuries result from a great variety of traumata, such as blows, kicks, falls, crushes, automobile or railway accidents, and the passage across the trunk of the wheels of a truck or other heavy vehicle. Not infrequently they are associated with other lesions, as fractures of the ribs, pelvis, or of the extremities, head or spinal injuries, the symptoms of which may completely overshadow those of the abdominal lesion and cause it to be overlooked. In these cases, frequently there is no history of an injury to the abdominal wall, no mark of trauma, and no complaint of abdominal pain."

The effect of a blow on the abdominal wall will be modified by the condition of the abdominal muscles; thus an unexpected blow in which the muscles are relaxed will produce a relatively greater injury to the underlying organs, than when the organs are protected by rigidly set muscles. A blow directly over a distended hollow viscus, as the stomach or urinary bladder, will

frequently cause a rupture of that organ, and extravasation of the contained matter; while the same blow received during collapse of the organ would produce no untoward effect.

Enlargement of the liver and spleen to such an extent that they lie below the protecting arches of the ribs, favor their injury as a result of abdominal traumata.

It must be remembered that extensive and fatal visceral ruptures may be produced by comparatively slight contusions, and that the amount of internal injury is due more to the condition of the organ and the protecting abdominal muscles than to the force of the blow.

In rupture of any portion of the alimentary canal, immediate extravasation of the contained matter will result; producing as a rule, at first, symptoms of peritoneal irritation, as localized pain, tenderness, vomiting, and muscular rigidity, and later followed by symptoms of peritonitis, generally of the spreading variety, and characterized by an increase in the severity and area of pain, tenderness, and muscular rigidity, with fever, prostration, meteorism, and the occurrence of a marked leucocytosis; leading rapidly to a fatal termination, unless speedily relieved by surgical procedures.

Injuries of the liver and spleen following abdominal contusions are generally found to be more or less extensive fractures, which result in the extravasation of blood which varies in amount with the extent of the injury. The commonest seat and direction of the fissure in cases of rupture of the liver are along the falciform or coronary ligaments. They may extend to any depth, and often nearly bisect the organ. In the deeper fissures the hemorrhage may be so rapid and extensive as to produce immediate death or symptoms of complete collapse. In fractures of the spleen, the direction of the rent is generally that of the large blood-vessels, and is therefore from the external surface, the anterior or posterior border of the organ, towards the hilum. On account of the great vascularity of this organ, even small tears frequently give rise to severe and often fatal hemorrhages. In ruptures of the kidney the line of fracture also corresponds as a rule, with the direction of the blood-vessels. When limited to the cortex, the hemorrhage is moderate; but when complete rupture occurs, the larger vessels are torn and the hemorrhage is profuse, often forming enormous retroperitoneal

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hematomata, and also intraperitoneal extravasations in case that membrane is torn by the original trauma. When the pelvis or ureter is injured, urinary extravasation necessarily occurs, giving rise to a gradually increasing tumor of the flank, which not infrequently becomes infected, forming extensive perirenal suppuration.

In rupture of the bladder from a blow over the distended viscus, the tear may be extraperitoneal, intraperitoneal, or may be both extra- and intraperitoneal. If the injury is limited to the bladder, the symptoms may be only those of a slight transitory shock and those of moderate peritoneal irritation caused by the extravasation of the urine into the peritoneal cavity, followed later by a progressive peritonitis. If, on the other hand, the injury is due to a fracture of the pelvis, the rupture is more generally in the extraperitoneal portion of the bladder, and is frequently caused by the driving inward of a fragment of a broken ramus. The same injury frequently causes rupture of the large vessels of the pelvis, giving rise to a hemorrhage, which, if severe, may produce symptoms of shock which may completely mask the initial evidences of peritoneal irritation.

Injuries of the omentum and mesentery are rarely found unassociated with other visceral lesions. When present, the symptoms are generally those of extensive hemorrhage and peritoneal irritation.

Let us now consider some of the lesions encountered in a series of forty or more patients on whom I have either operated myself, or been present at the operation as consulting assistant. This, I think, can best be done by giving a few illustrative cases, and in the selection of these cases, I have chosen only those with a single gross lesion, so that the symptomatology may not be too much obscured.

Fracture or rupture of the liver—Case 1 illustrates the gravest type of this injury, but with symptoms and signs so misleading that no diagnosis could be made, and no idea of its seriousness was suspected until the abdomen was opened. A brakeman, twenty-eight years of age, received a blow on the abdomen in a railway accident. He was unconscious for a few moments as a result of the blow, but quickly recovered, and when brought to the hospital complained only of pain at the umbilicus. There was no vomiting. He was somewhat pale, the pulse was rapid, but he showed none of the evidences of marked shock. Examination showed well-marked rigidity of the right rectus muscle and tenderness over its upper third. Dullness

in both flanks. The patient did not give the appearance of one severely injured, and considerable difference of opinion existed among those of the staff who examined him as to whether he had a visceral lesion or only a severe contusion of the abdominal wall. He was, however, immediately prepared for operation, and under ether anaesthesia an incision was made through the upper portion of the right rectus muscle and the peritoneal cavity opened. As soon as the peritoneum was incised, a large quantity of blood escaped, apparently from the direction of the pelvis. The incision was hastily enlarged, so that it extended from the thorax to the pelvis, and the intestines retracted, exposing the pelvic cavity, which was filled with clotted blood. This was hastily removed, but quickly refilled. Considerable time was lost trying to find the bleeding point in this region, and after it was demonstrated that none was present, but that the blood escaped from above, the ascending colon was followed upward and the small intestines retracted to the left. As soon as this was done, there was a gush of black blood, apparently from the upper part of the vena cava, which exceeded in quantity and rapidity of outward flow anything which I have ever seen in my surgical experience. The patient was quickly exsanguinated, and was kept alive only by the most energetic stimulation by intravenous infusion, the hypodermic use of whiskey and strychnine, and an enema of hot coffee. The hemorrhage was temporarily arrested by gauze packing, and after a more thorough examination the vena cava was found to be intact, and the source of the hemorrhage was an enormous rent in the right lobe of the liver, along its falciform and right coronary ligaments, which allowed the greater portion of the right lobe to hang downward, as on a hinge. This was hastily packed, the abdomen cleansed and united with interrupted silk worm gut sutures.

The hemorrhage was completely arrested by the packing and upward pressure of the right lobe, but the patient never rallied, and died within twenty-four hours.

This case is an excellent example of a class of which the writer has seen several, where the symptoms and signs gave no adequate idea of the extent of the injury. Were it not for the presence of well-marked muscular rigidity, the patient would in all probability have been treated by the expectant method.

Case 2. Was that of an injury to the left lobe of the liver, but with every symptom and sign of alarming intraabdominal hemorrhage from some source in the left upper quadrant. A boy fourteen years of age while coasting lost control of his sled and came violently in contact with a lamp post. He was moderately shocked, but managed to reach his home, lay down on his bed, and complained of nausea, weakness, and pain in his upper abdomen which was increased by deep respiration. He was soon seen by his family physician, who instantly recognized the gravity of the injury, telephoned to me, and at the same time summoned an ambulance, engaged a room at a nearby

hospital, and left orders to have the operating room prepared for an immediate laparotomy.

When I saw the patient, twenty minutes later, there was apparent on inspection, extreme pallor of the face and extremities, air hunger, and a rapid shallow respiration. The abdomen was moderately distended, muscular rigidity most marked in the upper left quadrant, distinct tenderness under the left costal border; fluid wave and shifting dullness in the flanks. Pulse just perceptible at the wrist and very rapid. It was even impossible to count it in the femoral or carotid region.

At the hospital his blood was typed, a donor found, and the two placed on adjoining tables. As soon as the transfusion tubes were in place, and the patient under light anesthesia, orders were given to start the flow as soon as the peritoneal cavity was opened.

An eight inch incision was made through the upper left rectus, and a large quantity of fluid and clotted blood quickly evacuated. On introducing the hand to the splenic area, a mass of fragments of what was supposed to be spleen was brought to the surface of the wound, and much to our surprise was found to be the left lobe of the liver. There were at least five irregular fragments hanging to the falciform ligament by pedicles of various sizes. On further inspection two spurting jets of bright arterial blood were seen issuing from the torn surface near the ligament. These were secured by two mass ligatures, the fragments pushed against the diaphragm, and held in place by a very large mass of gauze packing, the end of which protruded from the upper part of the incision. The remaining portion of the wound was closed by through and through silkworm gut sutures. During this operation the patient received 1400 cc of blood. He rallied gradually, and was able to take water and fluid food on the second day. The temperature varied between 99 and 102 for ten days, when he was again anesthetized and the gauze removed. No hemorrhage followed its removal, but a large quantity of reddish brown syrupy fluid composed of blood and disorganized liver tissue. For nearly three weeks the temperature varied between 101 and 105, but with a normal blood count, and no signs of suppuration. This was regarded as the manifestation of a toxemia produced from absorption from retained necrotic fragments of liver, and in time subsided, as the deep-seated cavity was frequently irrigated with Dakin's solution. From this time on his recovery was rapid and uneventful.

In reviewing my records, I find that in 1907 I operated upon another case, in which a lad sixteen years of age injured the right lobe of his liver in a similar coasting accident. The amount of hemorrhage in this patient, while considerable and alarming, was not as great as in the case just reported. The treatment was essentially the same, and the patient recovered.

Ruptures of the spleen—From a number of cases of splenic injury, I will give one, which also illustrates the mildness of the initial symptoms.

Case 3. A school boy aged fourteen years, was

thrown from his bicycle striking a rock. The contusion occurred over the region of the lower ribs on the left side. He experienced some pain in the abdomen and vomited once, after which he felt relieved and walked home. On examination after his admission to the hospital, his pulse was found to be 116, temperature slightly above normal, countenance pale, but no other evidence of shock. The abdomen was rigid and tenderness existed in the region of the umbilicus and somewhat to the left. There was dullness in the flanks but no evidence of free gas in the peritoneal cavity. He was immediately prepared for operation, and, after starting an intravenous infusion, an incision was made through the upper part of the left rectus muscle. As soon as the peritoneal cavity was opened, free blood escaped in large quantities. The incision was enlarged and the small intestines withdrawn from the cavity, which enabled us at once to locate the source of the hemorrhage as a transverse tear through the middle of the spleen. As the condition of the patient was extremely critical in spite of an abundant infusion and the most vigorous hypodermic and rectal stimulation, a mass of gauze was hastily thrust into the rent, and the spleen replaced and pushed snugly against the diaphragm. The abdomen was quickly cleared of clots, washed out, and the wound partly united with silkworm gut sutures, the end of the gauze packing being allowed to emerge through the upper angle of the wound.

During the next three or four days the patient was kept alive only by the most generous stimulation and repeated saline infusions. The gauze was subsequently removed through an incision in the flank, made under anesthesia, and he made a good recovery. In this case, also, the symptoms and signs even after eighteen or twenty hours gave one no idea, or even a suggestion, of the extent or gravity of the injury. The diagnosis of visceral injury was made from the history and presence of tenderness and well-marked muscular rigidity.

While I realize that most surgeons advise splenectomy in cases of grave injury to the organ, associated with alarming hemorrhage; and while I fully agree with this view, in cases where the spleen seems hopelessly injured, in cases like the foregoing where there is but a single deep fissure, without extensive injury to the fragments, it is often possible to save the organ by suture or packing.

Injuries of the intestine—A schoolboy; six years of age, while playing about a room, overturned a table, the edge of which struck him over the upper part of the abdomen. The blow caused considerable pain, and he complained of feeling very weak and faint. He was brought immediately to the hospital, and on admission his pulse was found to be 100 and the temperature slightly subnormal. There were pallor, cold extremities, perspiration, and the child appeared in a condition of moderate shock. On examination the abdomen was found to be rigid. Tenderness existed in the region of the umbilicus. No evidence of free fluid or gas in the peritoneal cavity. Diagnosis of rupture of the intestine was made by one of the

house staff, and a median incision made extending from the ensiform to the umbilicus. As soon as the peritoneum was incised, free blood, gas and intestinal contents escaped. The lesion was found to be a double rupture of the jejunum about six inches from the duodenojejunal flexure. The ruptures were entirely separated from each other, and each involved the entire circumference of the gut, leaving a segment four inches in length attached only to the mesentery. Considerable hemorrhage had taken place from the wounded mesenteric vessels. The unattached segment of gut was removed and the upper and lower openings of the jejunum united with a small Murphy button. The abdomen was cleaned and united. The child continued in a condition of profound shock for twenty-four hours, and died.

Although in this case the symptoms were fairly typical, the degree of shock was surprisingly slight when we consider the extent of the lesion.

In the following case, the patient lost his life through a secondary complication; but as the history presents several interesting features, I will briefly recount it.

A man, thirty-eight years of age, was struck in the middle of the abdomen by a falling bale of paper. He experienced considerable pain at first, but soon recovered; and after his admission to the hospital he presented no evidences of shock. The pulse was between 60 and 70 and of good quality; there was slight tenderness over the epigastric and hypogastric regions, and an appreciable degree of muscular rigidity. No vomiting; no signs of free fluid or gas in the peritoneal cavity. A diagnosis of visceral injury was made and an immediate operation advised. This was indignantly refused, and the patient insisted that he felt perfectly well, and was suffering only from a slight bruise of the abdominal wall. During the following night the pain increased, and the patient became restless and feverish. The next morning he appeared seriously ill. The abdomen was distended and tympanitic; the liver dullness was not entirely obscured. Tenderness and rigidity were everywhere present. There was flatness in both flanks, which disappeared on changing the position of the patient. The blood count showed 16,000 leucocytes.

Although it was recognized that the outlook was then well-nigh hopeless, at the patient's request the abdomen was opened under ether anesthesia. As soon as the peritoneal cavity was entered, a large amount of gas and foul-smelling, cloudy fluid escaped, which was found to be a mixture of seropus and intestinal contents. The intestines in the lower half of the abdomen and pelvis were injected and covered with a fibrinous exudate. A large perforation was found in the lower third of the ileum through which gas and fecal matter were constantly escaping. Several other severely bruised and ecchymotic areas were found on various coils of the small intestine. The rupture was united with two rows of Lembert sutures, the peritoneal cavity thoroughly irrigated, and the wound closed with two cigarette drains, one leading to the pelvis and one to the right flank. The patient was

infused and generously stimulated. He did exceedingly well for more than a week. The temperature and pulse fell to the normal; the distention and rigidity disappeared; the bowels moved, and the patient took plenty of fluid food. About the tenth day he began to complain of pain and to develop signs of a rapidly spreading peritonitis, and died two or three days later. On autopsy, the original perforation was found to be healed, but a second perforation had occurred at the site of one of my contused areas seen at the time of operation.

This patient would undoubtedly have recovered had it not been for the secondary perforation.

Injuries of the kidney—Of these there have been a considerable number, and I am happy to state, nearly all have recovered. I will give the histories of two, one practically without symptoms, and one, a severe crushing injury with all the symptoms and signs of grave hemorrhage.

A negro boy, four years of age, was admitted to the hospital a short time after a contusion on the left flank and abdomen caused by falling down a flight of stairs. There was comparatively little evidence of shock, so little, in fact, that the child fell asleep soon after the injury, and the parents did not consider the question of seeking medical advice until it was noticed that the boy passed bloody urine.

On examination there was found only a slight tenderness over the left lumbar region. There was no evidence of free fluid in the peritoneal cavity and no rigidity of the abdominal muscles. The child had not vomited, and made no complaint unless handled.

A diagnosis of severe contusion or rupture of the kidney was made, and the child immediately prepared for operation. Under general anesthesia an oblique lumbar incision was made exposing the kidney, which was found surrounded by a large mass of clotted and fluid blood and with a decidedly urinous odor. When the kidney was exposed, a transverse fissure was found at the junction of the upper with the middle third of the organ. The fissure extended from the external border to the hilum, freely opening the pelvis. The parts were thoroughly disinfected with peroxide of hydrogen and salt solution, and the upper segment replaced against the lower and sutured with catgut. The external wound was united with drainage and the dressings applied.

The child reacted well from the operation. The hematuria ceased at the end of twenty-four hours, and recovery was uneventful.

The second case was that of a man severely crushed in a railway accident. On admission he was practically pulseless and in profound shock. The left half of the abdomen was rigid and tender, marked edema of the flank and free fluid in the peritoneal cavity. Under general anesthesia the abdomen was opened through the left rectus muscle, and a quantity of blood evacuated. On further exposure the peritoneum was found to be extensively torn in the renal region, through which could be felt the torn surfaces of a badly injured kidney. The wound was quickly

united and a large incision made in the flank. The kidney was torn into three irregular fragments, and the hemorrhage so severe that a curved clamp was placed on the pedicle and the kidney fragments cut away. As the patient was in extremis, this was left in place, the wound packed with gauze, and the patient placed in bed. Vigorous stimulation and repeated intravenous infusions brought about a rally, and he slowly recovered. The clamp was not removed until the tenth day. He made a satisfactory convalescence.

Injuries of the bladder and ureter—A middle-aged man received a crushing injury about the pelvis, and was brought to the hospital in the ambulance. When admitted he seemed in a condition of mild shock only, and complained of slight pain about the right hip, buttock and lower part of the abdomen. Examination revealed at first only multiple contusions. Urine passed immediately after his admission was clear and normal in appearance. A little later he was catheterized, and a small amount of bloody urine was withdrawn. A careful re-examination revealed a fracture of the pelvis and slight rigidity of the lower portion of the right rectus muscle, and a distinct tumor occupying the right half of the pelvis. As the patient seemed to be passing rapidly into a condition of deeper shock, and as the pulse was becoming more rapid and weak, he was prepared for operation. After the administration of the anesthetic the catheter was again passed, and to our astonishment a considerable quantity of clear urine was once more obtained. We were wholly at a loss to account for the intermittent hematuria, but as his condition was rapidly becoming one of great gravity, and as there was an evident lesion of some kind on his urinary tract, an explanatory laparotomy was hastily performed. On opening the abdomen an enormous retroperitoneal hematoma was found occupying the right half of the pelvic cavity and extending well up over the iliac muscle. On incising the parietal peritoneum a vertical fracture of the right innominate bone was found just anterior to the sacro-iliac joint, a rupture of one or more of the larger branches of the internal iliac vein, and a complete transverse rupture of the right ureter. As soon as the peritoneum was incised and the clots turned out, the hemorrhage was very profuse, and was controlled with great difficulty, owing to the deep position of the bleeding vessels and the difficulty in keeping the field clear. (The Trendelenburg posture was not employed.)

After the hemorrhage was finally arrested, the ureter was anastomosed by the Van Hook method and the abdomen closed with drainage. The patient never rallied from the shock.

Case 2. Male, aged twenty-five years, was brought to the hospital in a state of severe shock after a crushing injury to the region of the pelvis by being rolled between a car and brick wall. He complained of great pain about the pelvis, which was accentuated by any movement of the trunk and legs; also a strong desire to urinate. On examination there was observed mobility and crepitus, easily appreciated whenever the iliac

crests or other portions of the pelvis were moved. Tenderness was well marked in the hypogastric region, and a semi-solid tumor was appreciated just above the pubic symphysis.

On catheterization the bladder was found to contain only a very small amount of bloody fluid; previous spontaneous efforts at urination had been ineffectual.

The pulse was rapid and weak, the temperature subnormal, the patient was apathetic and could give no intelligent account of the accident. He was immediately prepared for operation. Under ether anesthesia an incision was made in the median line just below the umbilicus and the peritoneal cavity opened, for the purpose of exploration. Through this incision it was easily demonstrated that there was no intraperitoneal rupture, but that there was an enormous hematoma of the prevesical space extending more to the right than to the left side. The abdominal wound was immediately closed and the prevesical space opened by an extension downward of the original incision. A large amount of clotted blood was found and removed, after which the hemorrhage from the deeper portions of the wound was very free, which necessitated immediate packing and the administration of a large intravenous saline infusion and other stimulating measures.

As soon as the hemorrhage was controlled further examination revealed a transverse fracture of the horizontal ramus of the pubis on the right side, one fragment of which was directed inward and lay within the cavity of the bladder, passing through a ragged tear in its anterior wall which extended well downward to the prostatic portion. The displaced fragment of bone was forced back into position and sutured to its fellow by heavy chromicized catgut, the tear in the anterior wall of the bladder was sutured with two or three layers of catgut, and a small opening for drainage made in the summit of the bladder. These procedures were extremely difficult to carry out, especially the suturing of the deeper portion of the bladder wound, and consumed considerable time. It was my original intention to establish perineal drainage, as there was evidence of injury to the deep urethra and triangular ligament; but before this could be done the condition of the patient became so critical that the operation had to be abandoned, and we were obliged to hastily pack the wound and place the patient in bed. Several infusions were given and other stimulating measures. He remained in a condition of severe shock for many hours, and then slowly improved. The wound became badly infected in spite of constant irrigation and frequent dressings. Several days later he was again etherized and a perineal opening made into the urethra, through which the bladder was drained; another drainage tube was passed through the perineal wound upward through the triangular ligament above the prostate to drain the foul prevesical space. These tubes were left in place for several weeks, until the wound was clean and until the suprapubic bladder wound, which had sloughed extensively, was beginning to close. They were then removed and

the perineal opening was allowed to heal. Sounds were passed to preserve the patency of the urethra.

The suprapubic opening, however, persisted, owing to its large extent; and as a result a condition of contraction of the bladder gradually developed. The urethra recontracted, and the passage of sounds became more and more difficult. A second external urethrotomy was performed, and the bladder drained for several weeks in the hope that the fistula would close. This was finally abandoned and the perineal wound allowed to heal.

Efforts were then made to dilate the bladder by injecting each day as much boric acid solution through the catheter as the bladder would hold, preventing egress of the fluid through the suprapubic wound by digital compression. By this means the bladder capacity was increased in thirty days from one and one-half ounces to five and one-half ounces. He was then discharged, and told to report once a week for sounds, in the hope that the suprapubic fistula would heal spontaneously.

During his absence from the hospital the bladder became badly infected, and he developed a renal infection on the right side. Sudden plugging of the upper extremity of the ureter by a calculus caused an acute attack of pyonephrosis, which brought him back to the hospital. On admission his temperature was 104 F.; pulse 130. He was suffering from a severe aching pain in the right flank, which was the seat of a large oval tumor.

Nephrotomy was immediately performed, and about twenty ounces of pus and an obstructing ureteral calculus removed.

Two months later a plastic operation was performed on the suprapubic opening, which narrowed it to the size of a darning needle. Later it closed, and with the exception of a contracted bladder the patient is in excellent health.

Visceral injuries of the type illustrated by the foregoing cases are for obvious reasons necessarily fatal unless promptly relieved by surgical measures.

In many of these cases the condition of shock, even after the occurrence of the severest lesions, is during the first few hours, surprisingly slight; and one must not judge of the gravity of the injury by the degree of initial shock.

Pain, tenderness, and muscular rigidity are often the only symptoms during the first few hours after the receipt of the injury, and the occurrence of these three symptoms following an abdominal trauma should be regarded as a positive indication for an exploratory laparotomy. To delay exploration for the occurrence of other more characteristic and localized symptoms is but to invite disaster, as the resistance of the individual after the receipt of the severe visceral injury diminishes with every hour of delay, and

the only hope of his being able to withstand the added shock of a severe surgical operation is to inaugurate the treatment at the earliest possible moment.

MILK SICKNESS

MARK GREER, M. D.

VANDALIA, ILL.

Whether this disease or illness might be interesting to the medical profession, I do not know. I thought possibly it might be, in sections of the country where this occurs, especially in the Central and Southeastern states. Some recent cases that I have seen brings this disease to me as one of special significance. Milk sickness is also called white snake root poisoning and puking fever. In cattle it is called white snake root poisoning, trembles or slows.

Before entering into any discussion of milk sickness I will note some cases that I have seen this Fall.

Case 1. Mrs Minnie Bell Walsh, about 40 years of age and living five miles southeast of Vandalia. This vicinity is quite a wooded region and has a history of milk sickness. Mrs. Walsh became ill about September 18. She felt restless, weak and listless for a few days. Then developed pains in stomach, became nauseated, vomiting, intense thirst, loss of appetite, tongue swollen, obstinate constipation, pulse became weak and respiration labored. Temperature subnormal, remaining around 97. Gradually became worse, retching became weaker but did not stop, eyes became glazed, winking absent, coma, death in twelve days from beginning of illness.

I would like to add that the cow from which they got their supply of milk, died on the day following the death of Mrs. Walsh. It had a definite history of trembles or slows. On this same farm three years ago a family of four were ill for two weeks with milk sickness. All recovered.

Beginning at the barn and gate of this farm where the cows are turned into the pasture the white snake root was very thick and extended around the edge of the woods to a partly cleared two or three acres where there was a regular field of it. Specimens were sent to Albert A. Hansen of the Department of Agriculture, Purdue University, Lafayette, Indiana. Mr. Hansen has made quite a study of the white snake root and these specimens were identified as the white snake root.

Case 2. The "Buck" Matheny family, living in Pope

Township, Fayette County, five miles west of Vernon, Ill. I saw these cases October 26, with Dr. A. L. T. Williams, of Vandalia, Ill. The mother had died two days before; a sixteen year old girl was lying comatose and died the next morning. Two boys of about the ages twelve and fourteen were seriously ill. The father, a three year old baby and another boy had been ill but had practically recovered. The girl at the time we saw her was comatose. Temperature 96.8, pulse 70. All muscular reflexes poor. Patellar reflexes absent. Eyes glazed and fixed. Intestinal tract seemed paralyzed; cathartics had no effect. She died the following morning.

The two boys, twelve and fourteen, had subnormal temperatures, 97; flat abdomens. History of becoming slowly ill, loss of appetite, vomiting, severe pains in abdomen, all obstinately constipated, tongues coated and slightly swollen. The boys recovered very slowly. All the recovered are still rather weak and become exhausted on the slightest exertion.

Mr. Matheny has lived on this farm for forty years and before this time on a farm adjacent. During this time he claims to have lost thirty or forty cattle and twenty-five to thirty sheep from milk sickness. He was pasturing several milk cows about six acres of open pasture and about ten acres of wooded pasture. In this woods, especially one side or edge of the woods, was very thickly covered with the white snake root. It was also found throughout the entire wood. Specimens were sent to Albert A. Hansen, Purdue University, Lafayette, Indiana, and were identified as the white snake root.

History of Milk Sickness. This disease occurs principally in the Central and Southeastern states and has never been known to occur west of the Mississippi. It has been found mostly in unimproved lands of North Carolina, Georgia, Tennessee, Kentucky, Pennsylvania, Ohio, Michigan, Indiana and Illinois. It was more prevalent in the time of the early settlers but is leaving with the clearing up of the wooded regions. The disease was well known to the Indians and to the pioneers. Whole communities were swept off as recorded at Pigeon Creek by Nicolay and Hay in their history of Abraham Lincoln.

Etiology. The white snake root or *Eupatorium urticaefolium*. This is a slender, erect, perennial herb which grows from one to five feet high. The leaves are one to five inches long with deeply toothed and serrated edges. In the late summer the white flowers of the plants appear as compound cormbs of from eight to thirty flowers. They are so numerous in some places as to give the pasture a white appearance. A better

description may be had from an article on White Snake Root poisoning put out by the College of Agriculture, University of Illinois, August 1, 1924. Also circular No. 110 by A. A. Hansen of Purdue University, Dept. of Agriculture.

In a series of experiments at the Illinois station in 1922 this plant was fed each day to a group of animals. One cow died in seven days after consuming a total of twelve pounds of the plant on five consecutive days. A horse died on the sixth day after consuming a total of thirty pounds on five consecutive days. A ewe nursing a lamb died on the fourteenth day after eating a pound daily for thirteen consecutive days. The nursing ewe died on the ninth day. The toxic character of the weed was shown from cows pastured ten days on the weed by the fatal character of thirty drops of milk ejected into guinea pigs.

Transmitted through the milk from animals to man either by the drinking of milk or the eating of butter. There is some history of the disease being transmitted by eating the infected meat of cattle, but the milk and butter are in all probability the common conveyors of the poison.

Young children seem to suffer less than adults, very possibly because of the greater activity of their emunctories and the consequent elimination of toxic products. Fatigue, debility, constipation and mental depression seem to predispose.

Symptoms. The patient first develops a feeling of weakness and loses his appetite. Soon he has nausea and retching, this often from the first. He becomes very thirsty, his tongue is swollen and coated white; dry skin; sweet or offensive breath; abdomen absolutely flat; no peristalsis; obstinate constipation; pulse weak; respiration slow; temperature subnormal; fever over 100.

Patient may go to bed at once if attack comes on suddenly but generally after four or five days he takes to his bed, becomes apathetic, pays no attention to anything, retching continues but is weaker and he may not vomit anything. Finally, he goes into a state of coma, eyes become glazed, absence of winking and death takes place without a moan or a struggle. The mortality is 25 to 30%.

In cases that recover, convalescence is very slow. The patient remains weak and for weeks after any exertion fatigues him.

The cardinal things to remember in milk sickness is the association of onset: flat abdomen; no peristalsis and obstinate constipation;

subnormal temperature, retching and severe abdominal pains.

Treatment. Rather symptomatic. The Indians gave large doses of charcoal suspended in milk. Elimination is the important point if it can be done. Large warm enemas certainly are to be used. Calomel, olive oil and magnesium citrate might be used with success. Eserine and pilocarpine as peristaltic stimulants. Pituitrin might help. Nerve sedatives as needed.

Prophylaxis. Refrain from drinking milk and eating butter from cattle that graze in infected pastures after July 1. Advise farmers to pull the white snake root. This is best done in September when the flowers make the plant easy to recognize. It is unnecessary to carry the plants out of the woods since the plants die readily after being pulled. In case the seeds have ripened the plants should be piled and burned.

For the protection of the family as well as the cattle, the cattle should not be pastured in infected fields after July 1 of each year.

WHAT IS DIATHERMY?*

L. B. BAGNALL, M. D.

DE KALB, ILL.

At the last meeting in December, I overheard one of our members ask, "Just what is this diathermy that we hear so much about?" and when requested to prepare a paper for this meeting, thought probably there were more of you who are not using diathermy and would like to know just what it is.

I have been somewhat interested in diathermy and have been using it in a small way for the past year or more, so will try to answer the question without going into the physics of it, which is rather complicated and too deep for most of us.

Diathermy is the latest and unquestionably the most useful of the high frequency modalities, and has had its greatest development since the world war. It is a means of generating any degree of heat; up to actual coagulation of the tissues; in almost any part of the body, by the passage of a high frequency current through the tissues.

A high frequency current is an electrical current having such a high rate of alternations or oscillations that living tissues do not attempt to

contract under each impulse. It differs from a low frequency current in the fact that its passage through living tissue is painless, non-traumatic (under proper density of current) and beneficial over a wide range of indications, whereas, the passage of a like volume of low frequency current would be extremely painful, would traumatize muscles, nerves and bone and would be dangerous to use.

The ordinary alternating current which completely reverses itself 120 times per second is known as the 60 cycle current and the one usually chosen for street lighting.

D'Arsonal found that a current alternating less than 15 times per second produced clonic muscular contractions; a frequency of 20-30 per second produced tonic spasm; and increasing the frequency beyond 30 per second, increased the intensity of the spasm up to about 300 per second, beyond which the intensity became less until a frequency of 10,000 per second was reached, when all muscular contractions ceased. He also discovered that if a high frequency current was allowed to pass through the living body, it produced an increase in the temperature of the tissues between the electrodes.

The passage of an electrical current through the tissues of the body will always produce heat, but the continuous current produces the greatest degree of heat at the points of contact with the electrodes, and in order to secure penetration of the heat, the application becomes too painful to use.

The faradic and ordinary alternating city light current also produce heat, but the violent contraction of the muscles which they cause, precludes their use. It has been found that the high frequency current, which oscillates millions of times per second, is the only form of electrical current that can be passed through the human body without causing pain, muscular contraction, or any discomfort other than that of heat.

The passage of the high frequency current through the tissues of the body sets up a violent agitation of the electrons, of which the tissues are composed, and the resistance offered to the movement of the electrons results in heat, causing an actual generation of heat within the tissues.

Heat, as we all know is essential to life, to health, and to function. Nature cures no diseases, repairs no injuries, and repulses no invad-

*Presented at the January 29th, 1925, meeting of the De Kalb County Medical Society.

ing enemy without an increase in the production of heat, known to us as fever or inflammation.

Heat may be used as a therapeutic measure in any one of three forms: 1. Conductive. 2. Convective. 3. Conversive.

1. Conductive heat is heat applied in contact, and transmitted by conduction, from the heated substance to the one it is desired to influence. Examples of this form are the hot water bottle, hot bath, hot compresses, etc.

2. Convective heat is heat derived from some source not in contact with the body, but thrown onto the body by radiation, or carried to the body by currents of air. Radiant light and heat from incandescent sources and superheated air from gas burners, electrically heated resistance wires, etc., are examples of convective heat.

Both conductive and convective heat have been used as therapeutic measures for many years, but their degree of penetration of human tissue is limited by the fact that the point of greatest heat is the skin surface, which becomes painful before the heat reaches the deeper tissues—due largely to the blood passing through the vessels of the skin and subcutaneous tissue carrying off the heat so rapidly.

3. Conversive heat is energy converted into heat in the tissues themselves. This is the form of heat that results in the tissues when a diathermy current is passed through them. The formation of heat is not greatest at the surface where the electrodes are applied, but somewhere in the tissues between the electrodes, and can be quite accurately localized by varying the size and point of application of the electrodes.

There are two forms of diathermy in use at the present time, known as medical diathermy and surgical diathermy.

Medical diathermy may be defined as a therapeutic means of increasing the general body temperature, or any portion of it, within physiological limits, by the passage through it of a very high frequency current.

In surgical diathermy, the temperature is raised far beyond this limit, causing an actual coagulation and destruction of the tissue.

Diathermy is a bi-polar method, the current passing through the tissues from one electrode to another. It differs from the continuous current in that it takes the shortest path between the two points of contact, whereas the continuous

current always follows the path of least resistance.

Surgical diathermy is obtained by using one large metal plate, known as the indifferent electrode, and a needle or small metal disc which is the active electrode. The concentration of the current from the large electrode up to the point of the needle or small metal disc generates sufficient heat in the tissues at this point to coagulate them, but the active electrode itself does not become hot enough to cause a burn such as occurs when a cautery is used.

In using medical diathermy there is not such a great difference in the size of the two electrodes. If of equal size, the greatest degree of heat is generated half way between them, and when of unequal size, the greatest degree of heat is generated nearer the smaller electrode, so that by varying the size and point of application of the electrodes, the heat may be generated in practically any part of the body.

There are also two methods of applying medical diathermy, known as the sedative and the stimulative technic, the choice of which depending upon the results desired.

The sedative technic is used when it is desired to obtain a high degree of internal heat, an intense hyperemia, an absorption of effusion or exudate, a softening of fibrosis, to relieve pain, and to relax muscle spasm.

If it is desired to stimulate repair in a sterile area, or to irritate and stir up an intense inflammatory reaction in some locality, such as non-union in a fracture, the stimulative technic is used.

The large majority of treatments are given for the sedative, absorptive, and germicidal affects, and are obtained by starting with a very low current, taking about 5 minutes to work up to the patient's tolerance, continuing here for 20-45 minutes or more, depending upon the condition, and then gradually reducing the current to the starting point.

The stimulative technic differs in that the full current is turned on suddenly, allowed to run for a few minutes and then terminated abruptly. This technic does not produce a high degree of heat but irritates the tissues, provoking a reflex action and causing, rather than relieving cramps.

The intense arterial hyperemia which results from the sedative technic causes an increased

metabolism of the part treated by dilating all blood vessels, opening up the lymph channels, activating the phagocytes and enzymes, and increasing the osmotic processes. The sedative and relaxing effects are evident from the first treatment, and the bacterial growth is inhibited by the high temperature produced. Bone, callus and scar tissue offer a high resistance and are heated to a higher degree than the surrounding tissues. They also retain their heat longer.

There are two main contra-indications to the use of diathermy; liability to start hemorrhage, due to the intense arterial hyperemia, and liability to cause an absorption into the blood and lymphatics of dangerous quantities of toxic material, when treating a septic condition where free drainage has not been established.

In conclusion, I will state that diathermy is nothing more than a means of producing internal heat, and the indications for its use are those of heat. However, it is the only means we have of heating the internal structure of the body to any appreciable degree.

OIL OF BITTER ORANGE PEEL WITH ETHER ANESTHESIA.

AMY WEISS, M. D.

CHICAGO

In the April issue Dr. H. Hoyt Cox suggests that by omitting pre-operative catharsis and enemata and by early feeding, gas pains may be largely prevented. There are cases, however, in which due to extensive handling of the viscera during the operation and to the odor of the ether vapor, the patient will in spite of these measures have considerable nausea, vomiting, and acute discomfort from tympanites. Gwathmey recommends administration of the oil of bitter orange peel during induction of anesthesia, to eliminate the odor of the ether vapor, and to abolish the stage of excitement. He finds that this administration during the induction also cuts down the post-operative distress.

During 1920 at the Fairmont Hospital, San Francisco, I had my first extensive experience in giving anesthetics. I used the oil of bitter orange peel in connection with ether by the drop method, but in addition to giving it during induction I also dropped the oil on the ether mask for two or three minutes after stopping the anesthetic. I have not found this post anesthetic administra-

tion recommended in any of the textbooks or used by any of the anesthetists with whom I have come in contact, although the results are most gratifying. The patients on awakening were always unusually comfortable. Exceptionally there were one or two very light attacks of vomiting, but never accompanied by nausea, and I do not recall even one case that had gas pains. As I was house physician, and made rounds twice daily, I was in position to keep in close touch with the patients. The surgeons noticed the difference, and used to request that the oil be not omitted. I kept no statistics at the time, partly due to the pressure of much work, but mostly because I thought that the practice of using some substance to mask the odor of the ether vapor was probably quite general, since it was recommended in the standard textbook on anesthesia. I have found since that the method is very rarely used, and that the other textbooks do not lay any stress on it. Flagg mentions in passing that one may pour some aromatic substance on the mask, and Hewitt says nothing at all on the subject.

I gave about 400 anesthetics at the Fairmont Hospital, and used the oil of bitter orange peel in about half the major operations. The patients not receiving it showed the usual clinical picture of more or less post-operative discomfort, always in marked contradistinction to those cases where it was employed.

Three years ago while visiting in Fort Wayne, Indiana, I gave an anesthetic for a laparotomy at the Methodist Hospital. They had no oil of bitter orange peel on the premises, so I used vinegar at the conclusion of the operation (this is also mentioned by Gwathmey) and the surgeon reported to me the next day the unusual post-operative comfort of the patient.

For tonsillectomies I never used the oil, as there is usually some blood swallowed, and the vomiting gives the patients considerable relief.

2549 Milwaukee Avenue.

IS MEDICAL PROGRESS EUGENIC?

A certain class of scientists have been troubling the peace of mind of many with the claim that the reduction of the death rate among children is actually injuring the race, by preserving the weaklings to become mothers and fathers and thus to lower the average quality of the stock. Professor S. J. Holmes, a biologist of considerable note now connected with the University of California, has vigorously contested this

claim, in a paper read a few days ago before a body of scientists in Chicago.

The medical improvement that has resulted in such a reduction in infant mortality during the past half century, he declares, has had to do chiefly with germ diseases and not with constitutional ailments. Now germ diseases do not pick out the weaklings and leave the strong, but strike down the latter just as easily as the former. It is not true, therefore, that the reduction in such diseases is altering the proportion between the physically weak and strong, to the disadvantage of the latter.

It will please many to have this assurance, but aside from all that, no one who has studied very deeply into the personal characteristics of those to whom civilization is indebted for many of its most important achievements in the past will agree for a moment that the world would have been better off if only the physically strong had been allowed to survive and fulfill the functions of parenthood. The instinctive desire of the vast majority of civilized and thinking people to see diseases exterminated, so far as may be possible, is right, and will never be reversed.—*Columbus Evening Dispatch*.

CORPORATION PRACTICING MEDICINE

The medical department of the Endicott-Johnson Corporation, of California, seems to be as complete a department as that of sales, executive production, or what not.

They employ some 16,000 shoemakers. Medical service is complete for home, office, and hospital. Workers are given periodic medical examinations, beginning with a pre-employment one. The medical department handled 90,000 calls during last year. There were 5000 ambulance services. All sorts of special clinics, including dental work, baby clinics, and all other special services are carried forward. The corporation's doctors made 75,000, and nurses 15,000 home visits alone during the year. The cost of the medical department was over \$400,000 for the year.

Hundreds—yes, thousands—of other corporations are progressing as actively with the development of medical departments as they are with any of their other activities. There are good points in many of these services, and there are bad ones in most of them. Nevertheless, they are here, and here to stay and to grow. They may be improved, but they cannot be destroyed even if anyone wished to do so. Whatever else this form of practice means, it certainly is better than turning all health work over to government bureaus.

A POSITIVE WASSERMANN

The Wassermann test is probably one of the very most helpful tricks that has ever been devised to aid in diagnosis. To those who remember as a nightmare the anxious uncertainty that so often came when trying to decide whether after all this patient had syphilis, or had been treated to the point of safety or not—whether this or that late manifestation came from a previous and unrecognized syphilis or not, the simple

and relatively dependable Wassermann test stands out as a wonder and we never lose our admiration for it.

By means of it persons with even a modicum of medical knowledge may reach conclusions quickly. Because of it clinical symptoms and clinical history are too often carelessly passed by. Because of it the profession and the people ignore other important features of diagnosis. Whatever the manifestation of illness, if the Wassermann shows positive, all else is forgotten. Because of it the profession has learned that syphilis is much more commonly the cause of human ills than had been previously recognized.

The Wassermann test is almost uncanny in its results. With all its wonderful good it can also do harm. It can and does make men forget that cardiovascular, neurologic, psychiatric and other disease entities exist independent of syphilis and that persons so affected may have a superimposed syphilitic infection just as likely as those who were perfectly well. Many patients in psychiatric institutions give positive Wassermann tests, but a certain number of them contracted syphilis after psychotic symptoms were manifest.

It is quite reasonable to assume that an incipient dementia praecox is more likely than a normal person to put himself in the way of contracting syphilis. A childhood infection, scarlet fever, typhoid, tonsils, teeth or what not may leave scars of rheumatism, endocarditis, etc. A superimposed syphilitic infection gives a positive Wassermann which directs all thought toward antisyphilitic treatment without any consideration of the true cause of the previous condition.

Certainly it is patent to all that "606" will not cure a dementia praecox or an infective endocarditis, any more than it will "cure" an amputated foot which may have happened to one whose blood Wassermann shows positive.

The plea is not to use the Wassermann less but to use it in connection with rather than to the exclusion of other important means of diagnosis, never forgetting that sick people may also contract syphilis and syphilitics may get sick. A positive Wassermann does not eliminate everything else from consideration.—*Editorial Abstract: Southern Med. & Surgery*, August, 1924.

NIETZSCHEAN PHILOSOPHY

Nietzschean philosophy may have fascinated Leopold and Loeb; they may have endeavored to live up to it; it may have proved too much for the youths, crammed but poorly trained in intellectual gymnastics. If it be so, it does seem regrettable that those mentally unfit to stand the strain of higher education should be allowed to struggle with it. The professors have neither the leisure nor the opportunity to know students individually, and those whose families are unable to guide along the path to knowledge are seriously handicapped; intellectual loneliness is dangerous.

What we should strive to develop in our sons is a certain mild skepticism which university training usually heeds in older countries, and which makes for gentleness, tolerance and the understanding of others. They must read Zarathustra, and be moved by a

strangely beautiful poetry, which carries one off the earth, and, having read it, realize that no philosopher could have written it, that it is the work of a poetical genius. Nietzsche's inconsistency is obvious, he who exalts strength in all its manifestations, hastens to say that the strong are never cruel, cruelty being the weapon of the weak; his strength, after all, is purely intellectual. Truly, he did ring war, but the student trained to think must be able to unearth the esoteric meaning which lies hidden beneath the chaotic mass of symbols and parables.

The Cambridge undergraduate, the Oxonian and the Sorbonne man are very much alike in one respect. All three are, in the full sense of the word, university men. They have a wholesome sense of their limitations, and a philosophy of life which blossoms out of the philosophies they have delved into, often blended and modified by their own interpretations of them. Greece has given them a thirst for beauty, harmony, intellectual honesty, the love of straight lines, in art and in thought. Rome, the sense of order, of achievement, of equilibrium. The medieval world has filled them with dreams and a longing for the spiritual; they have felt the thrall of the Gothic Cathedral where they perchance sat, wrapped in thought upon the infinite, or the remoter issues of the world. Christianity has pervaded and mellowed their souls. Their point of view is that of cultured men, because, to them, education was an end in itself, unrelated and unassociated.

The American youth is a bright and lovable person, often rather bent on asserting himself too early in life. He works hard, and plays hard, but work and play do not make for perfect mental equilibrium. Leisure to think is a factor not to be overlooked, and that he lacks. It is all very well to be executive, but one must remember that thought is or at least should be the beginning of action.—*Therapeutic & Dietic Age*.

IS THE SPIROCHETE WEAKENING?

It has been said that virulence of the syphilitic infection is in general diminishing; that its tertiary manifestations are somewhat less frightful than formerly, etc. This is not improbable, for we have seen the infectivity of other diseases fall very perceptibly in the recent past, not because the offending micro-organisms are weakening, but because humans are slowly acquiring immunity. But even if this be true there is little solace to be derived from the thought. Syphilis is still a disease of major seriousness and one to be combated most energetically. And, thanks to the advances made in the development of antisyphilitic drugs, the physician today is in position to combat it with a confidence which his predecessors never knew.

The changes that time has wrought in the armamentarium of the physician, particularly as affecting the arsenamines, is appreciated only by the few.

THE DISTRIBUTION OF DOCTORS

In the United States there is a doctor to every 724 persons; England has one to 1,087 persons; while central Europe has only one doctor to every 2,000 to 2,500 persons.

Society Proceedings

ADAMS COUNTY

June 8, 1925. This was a regular meeting of the Adams County Medical Society held at the Chamber of Commerce, the meeting being called to order at 8:20 p. m. by the president. Thirty-one members were present and the following guests: Drs. Milton Bitter and W. L. Calvert of Quincy, Dr. E. F. Weir, Meadville, Mo.; Drs. Robinson Duff and Irving F. Stein of Chicago, making a total attendance of 36.

The Secretary moved that the minutes of the May meeting be approved as published in the June BULLETIN. Seconded and carried. Dr. Pearce gave a final report of the convention committee. Dr. Wells gave the financial report of the convention committee, a report of which is appended. A motion was made thanking Dr. Wells for the splendid work that he did for raising the necessary funds to carry out the convention plans. This was amended by Dr. Nickerson to include a vote of thanks for the entire convention committee, the Woman's Auxiliary and the Secretary of the Society for the splendid aid they had rendered in making the convention a complete success. Both the original motion and the amendment were carried. Dr. Wells requested that an auditing committee be appointed to audit the financial report of the convention committee. Dr. Bowles made a motion that the report be accepted as read and that an auditing committee be dispensed with. Seconded and carried. The Secretary called the attention of the society to the fact that the Quincy Public Health Officer had made inquiry as to the Medical Milk Commission that had been appointed by the Society in July, 1923. Dr. Wells made a motion that there be no Medical Milk Commission at present and the matter of appointing one be postponed until fall. Seconded and carried. The Secretary read a letter received from the secretary of the Hancock County Medical Society in regard to securing the services of a Mr. Cralle of the Department of Education and Registration of this state to come to Quincy and help rid the county of all Chiropractors who are practicing in violation of the law. Dr. Pearce made a motion that the Secretary correspond with Mr. Cralle and induce him to come to Quincy to investigate the Chiropractic situation in this county. Seconded and carried. Dr. Wells stated that there was a balance left from the convention committee and moved that the society use such portion of this balance to purchase an A. M. A. Auto Emblem for every present member of the society and that those who had already paid for such an emblem to have their checks returned to them. Seconded and carried. The Secretary stated that both of our Representatives in the Lower House of the Illinois Legislature, Mr. Arnold and Mr. Bush, had voted against the recently introduced Chiropractors Bill and that we send them a letter of thanks in appreciation of their efforts. Dr. Koch moved that the Secretary write such a letter. Seconded and carried. The Secretary called the attention of the society to the fact that the cost of the con-

vention number of the BULLETIN had been so great that at present the BULLETIN was in debt to the extent of about \$100.00, which he had personally paid, and that it would be necessary to greatly decrease the size of the BULLETIN until it could be placed upon a better financial basis. Dr. Stevenson stated that the Chamber of Commerce contemplated withdrawing their advertisement from the BULLETIN, due to the fact that too few physicians were members of the Chamber of Commerce. Dr. Koch made a motion that a committee be appointed to report the advisability of holding the future meetings of the society at the Elks Club rooms. Dr. Knox made a motion that such a committee be appointed by the Chair. Both motions were duly seconded and carried. The Chair appointed Drs. Knox, Montgomery and Koch to serve on this committee. The application of Dr. C. R. Bates of Camp Point, Ill., was voted upon, having been approved by the Board of Censors. He was unanimously voted a member of the society. The Secretary asked what should be done in regard to the dues of Dr. Bates for 1925, inasmuch as he had already paid dues this year to the Omaha, Douglass County, Nebraska, Medical Society. Dr. Wells made a motion that the by-laws of the society be enforced and Dr. Bates pay his regular dues to this society. Dr. Stevenson made a substitute motion that the dues of Dr. Bates be remitted for 1925. The substitute motion was seconded and carried.

Dr. Irving F. Stein, Director, Dept. of Gynecology, Michael Reese Dispensary, Chicago, gave an interesting talk on "Newer Diagnostic Methods of Gynecology," which was illustrated by lantern slides. He laid special emphasis on the value of gynecological diagnosis as determined by pneumoperitoneum followed by the taking of roentgenograms. The Reuben test for sterility was fully discussed and emphasized. This was one of the most original papers that had been presented before the society in recent years. Dr. Stein's paper was discussed by Drs. Montgomery and Aldo Germann and finally closed by Dr. Stein. Dr. Center gave an interesting talk on the Periodic Health Examinations, laying emphasis on the appearance of albumin in the urine in connection with certain conditions of our local water supply. Dr. Swanberg presented roentgenograms illustrating marked benefit as the result of deep x-ray therapy in a case of lymphosarcoma of the chest. A large growth in the mediastinum having apparently disappeared three days after one such treatment had been given. The history of the case was described by Dr. A. H. Bitter. Dr. Swanberg also showed roentgenograms of the gall bladder following intravenous injection of certain dye substance. Dr. Knapp discussed Dr. Center's paper. Dr. Robinson Duff of Chicago showed an interesting reel of moving pictures that he had taken during the recent state society convention in Quincy. Dr. Nickerson made a motion that we give a rising vote of thanks to Drs. Stein and Duff for their presence at this meeting. Seconded and carried.

A motion for adjournment was then in order, the meeting adjourning about 10:50 p. m.

HAROLD SWANBERG, M. D.,
Secretary.

RANDOLPH COUNTY

The Randolph County Medical Society met in Red Bud, June 17, with 9 members present. Election of officers resulted as follows: J. T. Riess, Baldwin, president J. W. Beare, Ellis Grove, vice-president H. L. LeSaulnier, Red Bud, secretary Geo. H. Hoffman, Chester, C. O. Boynton, Sparta, and Dr. Herman LeSaulnier as executive committee. Board of censors were reelected. Dr. H. Reis of Belleville gave an address on "The County Unit Health Officer."

The following resolution was adopted:

Be it resolved that the Randolph County Medical Society request the County Board to appoint a County Health Officer who shall be a Doctor of Medicine recommended by the County Medical Society, and that the Board make the necessary appropriation for the said purpose.

And be it further resolved, that the County Board be requested to employ a County Community Nurse in lieu of the Tuberculosis Nurse now employed by the County, said County Nurse to be under the jurisdiction of the said County Health Officer.

H. LE SAULNIER, M. D.,
Secretary.

ROCK ISLAND COUNTY

June 10, 1925

The Rock Island and Scott County Medical Society met in joint session at Short Hills Country Club, June 9, East Moline, Ill. This was an open meeting, all wives of the physicians being invited. There were more than one hundred and fifty in attendance. All report this the best meeting held by the society for years, and also the best program.

Dr. Dean Lewis, who will enter Johns Hopkins University next fall as Dean, was the principal speaker, his paper being on "Fractures and Their Complications," using a skeleton to illustrate.

Dr. Oliver J. Fay, surgeon from Des Moines, Iowa, gave a very able address on "Some Bone Lesions of Obscure Etiology," illustrated by lantern slides.

Dr. Jas. F. Cooper of New York, medical director of Clinical Research Department, American Birth Control League, Inc., gave a paper on "Birth Control," later an address on "Contraceptive Technic."

Yours fraternally,
J. HENRY FOWLER.

Marriages

ROBERT M. GRAHAM to Miss Fanchon Elizabeth Bennett, both of Chicago, May 22.

JOHN F. RUNNELS, Chicago, to Miss Emma L. Armstrong of Fort Wayne, Ind., May 1.

Personals

Dr. David O. Thompson has been appointed health officer of Sycamore.

Dr. George F. Johnson has been elected mayor of East Moline for the seventh consecutive term.

Dr. Harry G. Leon, for three years on the staff of the Dixon State Hospital, has resigned to enter private practice in Chicago.

Dr. Jay C. Simmons has been appointed city health physician of Canton to succeed Dr. T. C. Hays, resigned.

Dr. Frank E. Smith, Decatur, has been appointed chief surgeon of the Wabash Railway.

Dr. Karl K. Koessler was recently elected president of the American Association for the Study of Allergy.

The reappointment of Dr. Herman N. Bundesen as commissioner of health of Chicago was confirmed by the city council, June 10.

Dr. Irwin W. Bach, Champaign, has been appointed physician to the Cunningham Home, Urbana, to succeed Dr. William M. Homm.

Dr. Roy R. Ferguson was elected president of the Chicago Medical Society at the annual election, June 16, and Dr. Frank R. Morton, secretary.

Dr. Richard J. Tivnen, professor of diseases of the eye, ear, nose and throat, Loyola University School of Medicine, Chicago, received the honorary degree of doctor of laws from that university at the commencement, June 9.

Dr. Florence B. Siebert has been awarded the Howard Taylor Ricketts Prize in pathology at the University of Chicago for work on febrile reactions following intravenous injections.

Dr. William C. Woodward, executive secretary, Bureau of Legal Medicine and Legislation, American Medical Association, received the honorary degree of LL.D. at the recent commencement at Georgetown University, Washington, D. C.

Dr. Clarence L. Whitmire has resigned his position at the Jacksonville State Hospital to accept a position with the U. S. Veterans' Bureau Hospital No. 62 at Augusta, Ga.

At the recent meeting of the Chicago Society for Internal Medicine, Dr. Karl K. Koessler was

elected president; Dr. William F. Petersen, vice-president, and Dr. Newell C. Gilbert, secretary.

Dr. John M. Dodson, executive secretary of the Bureau of Health and Public Instruction of the American Medical Association, received the honorary degree of doctor of science from the University of Wisconsin, Madison, June 22.

Dr. L. C. Murphy will take up his duties as head of the pathologic laboratory at the Decatur and Macon County Hospital, Decatur, July 1, to fill the position formerly held by Dr. Bartlett C. Shackford, who resigned some months ago to go to Los Angeles to accept a laboratory position.

Dr. B. Barker Beeson, Chicago, has been elected a corresponding member of the Italian Dermatological Society, the Argentine Dermatological Society, Buenos Aires; and the Therapeutic Society of Paris.

News Notes

—The cornerstone of the new Mount Sinai Hospital building at California Avenue and Fifteenth Place was laid, June 14.

—The new diagnostic laboratories of St. Luke's Hospital, which are on the eighteenth floor of the new building, opened, May 15, in charge of Dr. Edwin F. Hirsch.

—The cornerstone of the new Angustana Hospital, Garfield Avenue and Sedgwick Street, was laid June 21. Among the speakers at the ceremony were Dr. Albert J. Ochsner, Gottfred Nelson and L. G. Abrahamson.

—At the annual dinner of the Rush Medical College alumni, June 16, an anonymous contribution of \$100,000 to the University of Chicago Development Fund to endow the chair of surgery was announced. The total thus far contributed by Rush alumni amounts to about \$250,000.

—The Chicago Urological Society met, June 4, at the John Crerar Library. Drs. Gustav Kolischer and Alfred E. Jones spoke on "A Contribution to the Technic of Coagulating Vesical Tumors"; Dr. Harry C. Rolnick on "Infection Along Sheath of the Vas Deferens," and Dr. Harry B. Culver on "Plastic Induration of the Corpora Cavernosa."

—The last of eighteen cases involving druggists and physicians in Elgin was heard, June 3.

Their liquor permits, it is reported, will be revoked. In addition, about sixty other cases originating in Stephenson, Ogle and Lee counties will be heard and practically all of these licenses, the acting prohibition director states, are expected to be canceled.

—The University of Chicago has appropriated \$25,000 for the work of Rush Medical College, it was announced, May 28. This, the first appropriation made, is in consequence of the union of Rush College with the university a year ago. This money will be used for the general expense of instruction and research. In addition, Carl D. Greenleaf, Elkhart, Ind., has given \$10,000 for the work of Rush Medical College. The construction of the Rawson Laboratory of Medicine and Surgery is proceeding rapidly. In the center comprising the present college building, Senn Hall, and the new laboratory, adjacent to the Presbyterian Hospital, instruction leading to the M.D. degree (the first two years of which are given at the university) and postgraduate research, will be carried on.

—According to figures just published by the state health director, a record infant mortality rate for Illinois was established in 1924. The rate was 71 per thousand births reported, which is ten points lower than for 1923 and represents a decrease of more than 1,000 infant deaths. In cities of 10,000 or more population, the rate was 75 per thousand births, while in smaller cities and rural areas the rate was 65 per thousand births. Oak Park had the lowest rate (30), Cairo, the highest (141); Forest Park, the second highest (125), and East St. Louis the third highest (107). The largest decline in infant mortality was in Waukegan, where the rate dropped from 119 to 69. The infant mortality rate for the U. S. registration area for 1924 was 72, higher by one point than that of Illinois.

Deaths

GRIFFIN J. BAKER, JR., Marion, Ill.; Missouri Medical College, St. Louis, 1894; a Fellow A. M. A.; aged 55; died, April 23, of influenza.

FOREST EUGENE CULVER, Chicago; Chicago Homeopathic Medical College, 1903; Hahnemann Medical College and Hospital, Chicago, 1905; member of the Illinois State Medical Society; on the staffs of St. Joseph's and Illinois Masonic hospitals; aged 49; died, May 29, of uremia, following scarlet fever.

JOSHUA G. ELLIS, Cerro Gordo, Ill.; American Medical College, 1880; a Fellow A. M. A.; aged 66; died, May 4, at St. Mary's Hospital, Decatur, of heart disease.

BARTHOLOMEW FRANCIS FLANAGAN, Chicago; University of Illinois College of Medicine, Chicago, 1898; aged 54; died, May 27, of cerebral hemorrhage.

ANDREW GRAYDON, Peoria, Ill.; Jefferson Medical College of Philadelphia, 1877; aged 71; died, May 20.

FRANK LINCOLN HOWARD, Chicago; Jenner Medical College, Chicago, 1896; aged 64; was found dead in bed, June 6, of morphin poisoning.

W. B. KROESEN, Evanston, Ill.; Cincinnati College of Medicine and Surgery, 1873; Civil War veteran; aged 85; died, May 18, of cerebral hemorrhage.

CHARLES P. LEITZELL, Lena, Ill.; College of Physicians and Surgeons, Baltimore, 1882; member of the Illinois State Medical Society; aged 70; died suddenly, May 10, of heart disease.

CHARLES RICHARD LOCKWOOD, Kankakee, Ill.; University of Illinois College of Medicine, Chicago, 1902; a Fellow A. M. A.; served in the M. C. U. S. Army, during the World War; specialized in ophthalmology, otology, laryngology and rhinology; aged 48; died, May 23, of tumor of the brain.

JOHN W. PARMELY, Rock, Ill.; American Medical College, St. Louis, 1878; aged 79; died, May 20.

MELVIN P. PARRISH, Decatur, Ill.; Rush Medical College, Chicago, 1859; a Fellow A. M. A.; recently elected Councilor of the Seventh District; on the staff of the Wabash Employees' Hospital, where he died, May 28, of pneumonia, aged 56.

CHARLES HUNT POWELL, Pocahontas, Ill.; St. Louis Medical College, 1887; a Fellow A. M. A.; formerly professor of principles of medicine, physical diagnosis and clinical medicine, Barnes Medical College, St. Louis, and professor of medicine, Reliance Medical College, Chicago; served in the M. C., U. S. Army, with the rank of captain, during the World War; aged 62; died, May 12, of nephritis.

EDWIN E. RANDALL, Chicago; Rush Medical College, Chicago, 1897; a Fellow A. M. A.; aged 58; died, May 28, of organic heart disease.

PETER S. REPLOGLE, Champaign, Ill.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1874; Hahnemann Medical College and Hospital, Chicago, 1892; aged 77; died June 10.

OSCAR SCOTT STEWART, Chicago; Eclectic Medical Institute, Cincinnati, 1882; aged 68; died, June 6, at the Augustana Hospital of hypertrophy of the prostate.

BARNEY WELTY, Chicago; Rush Medical College, Chicago, 1887; aged 63; died, May 12, of carcinoma.

FREDERICK WILLIAM WERNER, Joliet, Ill.; Bellevue Hospital Medical College, New York, 1880; a Fellow A. M. A.; member of the American College of Physicians; aged 67; died, May 3, of heart disease.

WILLIAM C. WITTE, Chicago; Chicago College of Medicine and Surgery, 1913; aged 37; died, June 14, of cerebral hemorrhage.

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Editorial

PUBLIC LIFE AND THE PHYSICIAN

Public life makes its claims upon physicians even more legitimately than it does upon members of the other learned professions. Outside of the church—and in many instances even more than the church—the medical profession comes closer to the human understanding than does any class of people.

Without understanding, just and proper guidance of a citizenry is impossible. Wisdom of the mortal mechanism and of human peculiarities and idiosyncrasies is a sine qua non for the perfect ruler.

Already the back of the medical profession is burdened almost to breaking. But a renewed interest in matters civic, a return to those pioneer practices that made the minister, the physician, and the lawyer the tacit court of community last appeal is not the ultimate straw that will weigh down his back to breaking, but rather the lever that will lift the physician from his present position as a mere nonentity in the eyes of the general public.

In legislative halls today the medical profession is practically without representation. The bulk of physicians who are in public life have abandoned, for the most part, the practice of medicine.

Because of this unwitting neglect of civic conditions, the medical profession finds itself suddenly confronted with an environment of alien element. It is almost as if the very language of the land had changed overnight. Physicians, in the rank and file, have played the doughboy, and have failed to concern themselves with the necessary and protective strategies of their work. Lacking any particular concern in the work-a-day world, the rank and file of physicians fail to realize that individual problems are in reality community problems. Indissolubly are we "our brother's keepers." Problems calculated to affect medicine either favorably or unfavorably are be-

ing threshed out daily in every political concourse in the land. And in every such assemblage the medical profession should have representation.

THE FOOLISH VIRGINS

The foolish virgins with their lamps unfilled, unlit and untended were not more pitiable than is that short-sighted group of physicians who hold the belief that the practice of medicine is incompatible with the fulfillment of public duty, and that elections though occurring from time to time are merely for the benefit of the office-seeker.

Admission must be made that under the guise of legislation much is done that had better be left undone, and that far too often, executive officers fail in doing their duty.

Dereliction upon the part of a few officials is no excuse for defection on the part of others. This culpability among certain other citizens does not absolve physicians from taking part in elections, and actively at that. One cannot escape the touch of politics by stopping at home. Nor can one bring about needed reforms by absenting oneself from the primaries and from the elections. Truth is that men who do not touch politics find that politics touches them, and in a way that is not always enjoyed. For proof of this look at some current handicapping and even damaging legislation passed in recent years.

The practice of medicine can no longer be followed with that apathy prevailing hitherto. At every turn the medical man is brought into closest contact with the life surrounding him. Any physician who attempts to keep apart from that life and its interests will cease to exercise that influence without which it will be impossible for him to gain for his opinions the weight that they deserve.

UNCONSCIOUS LAWGIVER

To solve some of the more urgent problems of the people is often the immediate daily task of every doctor. By his training and knowledge the physician is peculiarly well fitted to form reliable and practical ideas about the poor laws, the regulation of school boards and the whole question of state education. Apart from purely legal and politic technicalities there are few pressing topics of the hour upon which a physician is not entitled to speak with the weight which judgment and experience command. But the physician today finds that his real influence in

the course of affairs is not at all commensurate with his claim to authority even in regard to matters more particularly within his own province. And within this province must be included contagious diseases and the rapidly broadening domain of preventive hygiene. In this last named field the physician finds wide range for employment of his scientific knowledge in the prevention of disease and the curtailment of human suffering. Small amount of reasoning is required to comprehend the fact that if pestilence and disease are to be driven from the community, their causes must be removed. As the most natural result it follows that if these causes are to be removed that the work must be inaugurated and prosecuted under direction of those competent to discover the cause and to perfect methods for the eradication.

To guide a man, show yourself capable of entering into those affairs in which he is interested. To secure passage of special legislation always requires interested and enthusiastic advocates. Enactment of class laws takes place more frequently when representatives of that class of individuals are present personally to superintend successful presentation of their interests.

To accomplish these reforms, dig the doctor out of his scientific rut, and make him a part of civic life. Concentrated effort on the part of the medical confraternity offers the only solution. A few physicians should be selected for each city council, village or county board, or state legislature. To do this will require united effort to place on the several tickets those men among the medical profession, who, when elected, will be able to make themselves heard and felt. There is no greater injustice rampant against the law-abiding and tax-paying citizen and his family than that he and they are unprotected by law against unscrupulous charlatans.

In Illinois a sad condition confronts the physician. Proposed legislation in this state demands attention. Our medical law as it is now administered seems entirely inefficient to protect either the profession or the laity. An organized lobby representing quacks and irregular practitioners of various breeds opposes valiantly protective legislation. This lobby did that when the bill came before the legislature that had for its object the creation of a State Board of Medical Examiners for different cults. This condi-

tion occurs at each succeeding session of the legislature.

It is our conviction that we must work as individuals, as a society and as a profession for wholesome legislation. For the relief of the profession in its hampered efforts to protect the public it seems that the lawmakers will do nothing of their own accord. Physicians should exercise influence upon our lawmakers to the end that they may be instructed to vote intelligently upon questions affecting medical legislation.

The profession appears to think it useless to attempt to bring about medical reforms. True, at the outset it will be uphill work. Still systematic perseverance will result in success. Perhaps years will be required for the accomplishment of this, but achievement is certain if there can only be had increasing energy upon the part of the profession. Certainly it behooves the profession to enter wholeheartedly into public life in order to bring about the greatest good for the greatest number.

QUACK DOCTORS AND THE PUBLIC

To an honest but credulous public, a source of great evil and unpardonable mischief, is the quack doctor. The people at large do not realize the importance of suppressing quackery. Regarding as a matter of course their own immunity from these destroyers very much as they possess cognizance that the streets are lighted at night, the average citizens pass by the quack as a matter of no importance. Now to understand what this quack doctor evil is, let it be comprehended that if, in most instances, quack doctors do not kill directly, none the less, they are the causes of death of hundreds of individuals, who have come to them in good faith, because on the door of the quack is that mark of sanctuary—a doctor's sign. Society's present mental trend is accented by a growing tendency to follow with an almost hysteric avidity, those many forms of charlatanism that are actually presenting nothing new, unless it is the readiness with which they are accepted. The majority of these "cults" and "isms" are types of quacking that attract their following not from the uninformed, but from the misinformed; not from simple ignorance, but from perverted intelligence. When it comes to yielding to the blandishments of various forms of quackery, the cul-

tured few are as prone, as the unlettered many. *Fear of the truth is strong and widespread.* How this fear is manifested regarding the knowledge and treatment of disease must be an item familiar in the experiences of all. The average man does not want to know too much of the truth about disease. There lingers in the stoutest hearts at times a little timidity of the truth; a little desire to feel that relief comes by some mysterious means.

POWER OF THE MYSTERIOUS

From the clouds and with obscure utterance, always have oracles spoken. With all his efforts, with the splendid bravery of his advance, man has not yet reached the point where he is willing to dispense with mystery, to clear up obscurity, and to make those issues that touch upon the welfare of his soul and body, tangibilities to be reasoned with and wrought out as he thinks and works in other fields of endeavor. Strong men who bear their full share of life's burdens as men should bear these weights, when learning of some personal physical disability are afraid to know the extent of the weakness or to be told of their actual condition. *This is an illustration of the fund of fear upon which fraud relies with confidence, and out of which charlatanism finds the substance of its prosperity.*

Fallacy inherent in such reasoning is plain. To a person who can set out with the principle that there is no reality in pain and disease, the treatment of them presents no difficulties whatsoever. Such a person needs only assure the patient that he has been nourishing a delusion, and, presto!—the thing vanishes. Long before "Christian Science" was discovered, a French dramatist parodied the character of a quack, who tries to impose on his patient the idea that pain is imaginary. The patient turns the tables upon his doctor by administering to the man of mock medicine, a thrashing that is indubitably sound. Crying out from the pain of it, the doctor is admonished laughingly that the pain is all imaginary.

Present day fantastic cults are revivals of ancient humbug—pseudo-religious or medicomystic doctrines in a garb and fashion adapted to the time. The osteopathist of today is but the bonesetter of old. Myriads of inert medicines exist, and multitudes of medicinal brands, nearly all of which reach their victims through some

weak spot in the mental make-up. For example it is certain that thought is a valuable therapeutic factor in treating many disturbances.

Full recognition of this fact brings one face to face with the essential influence and power exercised by various forms of charlatanism, even though it is clearly proven that this psycho-therapeutic factor is operative and effective only within narrow, well-defined limits. Error and abuse are manifest when this filament of a cure as it were, suitable only for certain conditions, is exploited as a principle itself, and one for general and universal application as well as worthy of being the foundation for the creation of a whole "school" of medicine or of treatment.

PERVERTED MEDICAL LAWS

By political influence medical laws of several states have been so perverted as to give legislative sanction to grotesque, ignorant, and dangerous sects of pretenders and charlatans.

Promoters of these cults and isms, are wise in claiming, each for his specialty, a number of virtues. A man gunning for this kind of game, describes symptoms that fit all real or imaginary ailments. Anyone can be suited. The hypnotic effect of this induces a state from which comes the certificate of cures. A cure of this sort lasts until the imaginary disease is replaced by a different one, or until some real disease produces conditions that no longer respond to the mental state induced, and so another remedy is tried.

Self-administration of remedies of the proprietary brand or of "patent" medicine is another source of frightful danger. Once the habit is acquired, the chances are that it will never be broken. This habit leads to useless expenditure of millions of dollars annually. Generally, too, by those who are least able to afford it. Many clergymen certify to the wonderful effects of these cure-all medicines. Idea of appearing before the public flatters many people so that they are willing to allow their names, their diseases, and even their photographs, to be paraded in newspapers and almanacs. One of the sharpest thorns in the flesh endured by medical men is the flaunting in their faces of certificates recommending all sorts of nostrums and signed by lawyers, clergymen, or other persons of prominence. As every quack knows the value of a clergyman's name appended to his cure, therefore strenuous efforts are made to obtain it.

Sometimes these testimonials are paid for. The silent story, the sub rosa rumor going the rounds at present is that about twenty nationally known women have been paid \$5,000 each for permitting their testimonials to be printed by a certain manufacturer—not, however, a medicine maker, or nostrum dealer.

It is true enough, too, that if the general public were less gullible that there would be less need for physicians. "A fool is born every second." Certainly some remedies have plenty of victims in their train. Lawyers pass out the adage that the man who acts as his own attorney has a fool for a client. As a rule, physicians do not prescribe for their own families. Intelligent people should not presume to be able to better doctor themselves or to prescribe for their own families than a physician would be to prescribe for his family. Yet a large part of the people, when feeling slightly ill immediately begin to dose themselves with patent medicines.

SEVEN RULES FOR HEALTHY CHILDREN

In the so-called "good old days" a great many children, like Topsy, "just grewed," and it was considered a special dispensation of providence if they grew to manhood and womanhood. Nowadays the child has a better chance than that, chiefly through the things that have been learned in the last twenty-five years about child care.

One man discovered diphtheria antitoxin—and today the disease which used to kill 40 per cent. of children who had it and wiped out whole families in a week or two, is, under prompt and appropriate treatment, practically harmless. One man found out how to take care of milk and keep it wholesome, and today the acute milk poisoning that I have seen kill children in 24 hours is hardly more than a memory. Another man found out that milk from tubercular cows could carry tuberculosis to children—and the fight against tubercular cattle is won today and children's tuberculosis is steadily on the wane.

Taken altogether, with the knowledge we now have about the care of children, the present day child has a better chance of growing up healthy and strong than the child of fifty years ago.

First, give him good food. This should come at regular intervals, and a definite period of time should be established for the digestion of

a meal—a half hour after each meal for recreation. The heavier meal of the day should be given at the noon hour, and special care should be exercised in arranging the evening meal to see that light, easily digested foods are given—not boiled meats and the heavier vegetables which require a long time for digestion.

During the school age there is a demand for sweets, which should be met with a supply of sugars that are not harmful. The use of cane sugar such as is found in a good grade of New Orleans molasses to make the candies for the children will be found of especial value. Of course, the child should have lots of milk and no tea or coffee.

Second, give him good air. Plenty of outdoor air, with windows wide open at night is our second rule for a sturdy child. We no longer think that night air is bad, for night air is the only air there is at night, and that which is out of doors is certainly far more healthful than any air shut up in a room.

Third, give him good company. A playmate with a slight cold is *not* good company, no matter how worthy his parents may be, for a mild case of any disease may pass on to your child a severe form. And be sure that your youngster is good company for his playmates—if he is ill, no matter how slightly, keep him away from other children.

Fourth, give him plenty of exercise. Let him run and play out of doors: let him get healthily tired, but not exhausted. It is no bad sign if he becomes breathless after exercise and perspires. However, if the sweating is caused by only slight exertion and if the face becomes pale, the amount of exercise must be limited. That, however, is the unusual case, for normally exercise makes rosy cheeks and good circulation.

Fifth, give him plenty of sleep. If you want your child to be a sturdy nerveless youngster, make it an inflexible rule to have him tucked away in bed with the windows open at eight or nine o'clock. And the younger he is, the earlier he should go to bed. The child from six to ten years of age should have at least twelve hours sleep; eleven to thirteen years, eleven hours, and fourteen to sixteen, ten hours.

Sixth, see that he has as little emotional excitement as possible. Make his life as much as possible a well ordered routine, free from emotional

disturbances, a calm life of eating, sleeping and play.

Seventh, have him looked over occasionally by a competent family physician. Many ills of childhood may be avoided by having a regular examination at stated periods. Some diseases are painless in the beginning, and not evident to the layman, but in making his examination the doctor will discover them and be able to correct them in the beginning. It is far better to keep your child well in this way than to have to cure him after he becomes ill.

These then, are the seven rules for healthy children—and simple enough rules they are—give him good food, good air, and good company; give him plenty of exercise and plenty of sleep and as little emotional excitement as possible, and have him observed by a competent family physician who is really a family friend—and don't dose him or operate on him just because some other child has been dosed or operated on. Let him alone unless there is a real reason for doing something else.

The present century, in comparison with the last, is emotional, nervous, a collection of high-tension wires. So are its people, old and young. The last ten years have been enough to rack the nerves of the world's parents—the children sense much of it. The parents won't change much, but the children must be guarded against this abnormal development atmosphere as much as possible. Good or bad, parental influence will leave its impression—it is up to the parents to mold that impression as best they can. Children from their earliest infancy like to have their parents interested in what they are interested in; they like to trust and be trusted. It is just as easy to lead them in the right way as the wrong way, if you try from the first to do it honestly, and interestedly, and fairly—and don't ever forget that you were a kid once yourself.—Exchange.

KAHN TEST FOR SYPHILIS

In the *American Journal of Public Health*, Havens and Taylor compare the Wassermann reaction and the Kahn precipitation test. They tested 1,395 patients. In 90.3 per cent, or 1,260 patients, there was complete agreement. In the remaining cases, in thirty-three, there was relative agreement, and in only sixty-nine and those cases who had received treatment for syphilis, previous to the taking of the test, was there any marked differences.

NEW BOOK ON CHRISTIAN SCIENCE
THE FAITH—THE FALSITY—THE
FAILURE OF CHRISTIAN
SCIENCE

By Woodbridge Riley, Ph. D., member of the American Psychological Association. Author of "American Thought From Puritanism to Pragmatism."

Frederick W. Peabody, LL. B., member of the Massachusetts Bar and one of the lawyers for Mrs. Eddy's sons in their equity suit in which their mother's sanity was questioned.

Charles E. Humiston, M. D., Sc. D., professor of surgery, College of Medicine, University of Illinois.

The most searching, poignant exposé of the pretensions of Christian Science that has yet been made. The three men responsible for it stand high in their respective professions.

Dr. Riley, after a most careful analysis of sources, shows precisely where Mary Baker Eddy derived every feature of her religious and therapeutic systems. Mr. Peabody demonstrates her questionable veracity, avarice, her inane grasping for power, and furnishes irrefutable evidence that the present government of the cult zealously emulates the founder. Dr. Humiston has gathered from a nation-wide questionnaire, numerous cases showing the tragic results of Christian Science treatment of helpless adults and still more helpless children.

The book is a religious, moral and medical indictment of Eddyism and its claims.

Fleming H. Revell Company, publishers, 158 Fifth Avenue, New York; 17 N. Wabash Avenue, Chicago. Order from your bookseller or the publishers. Price, \$3.50.

AMERICAN BOARD OF OTOLARYNGOLOGY

An examination was held by the American Board of Otolaryngology on May 26, 1925, at the Medico-Chirurgical Hospital, Philadelphia, with the following result:

Passed	137
Failed	20

Total examined..... 157

The next examination will be held at the University of Illinois School of Medicine on October

19, 1925. Applications may be secured from the secretary, Dr. H. W. Loeb, 1402 South Grand Boulevard, St. Louis, Missouri.

DR. ALBERT JOHN OCHSNER

Albert John Ochsner, eminent surgeon and writer, died at his home in Chicago July 25 of angina pectoris, aged 67. As a student in Rush Medical College, where he received the degree of M. D. in 1886, his capacity for hard work and accurate thinking was recognized by members of the faculty who predicted that he would make his mark in the profession. After two years of study in Berlin and Vienna he married and began the practice that brought quick recognition and eventually world-wide reputation and wealth. As chief surgeon of Augustana and St. Mary's Hospitals since 1896 his clinic became renowned and attracted surgeons from all parts of the United States. The following offices were held by him and the duties were performed with a high regard for his responsibilities and the uniform courtesy which bespeaks nobility of character: Professor of clinical surgery, University of Illinois since 1900; chairman section of surgery American Medical Association, 1900; president Clinical Congress of Surgeons of North America, 1910; president American College of Surgeons, 1923; president American Surgical Association, 1924. He was an honorary member of various American and foreign societies.

As an author, Dr. Ochsner published an authoritative work on "Organization, Management and Construction of a Hospital" in 1907. His "Handbook on Appendicitis," issued in 1906, popularized his so-called starvation treatment of that condition. Other works included "Clinical Surgery," 1905; "Surgery of the Thyroid and the Parathyroid Glands," 1910; "Surgical Diagnosis and Treatment," 1918. He edited the Year Book of Surgery, 1917-1923.

During the war Dr. Ochsner was a major with base hospital unit No. 11 organized in Chicago by the Red Cross.

He was active in the campaign to raise \$1,000,000 for the recent construction of a new wing of Augustana Hospital.

NEW ABBOTT PLANT

The new plant of the Abbott Laboratories, pictured below, and now nearly ready, will be, when occupied, the finest complete pharmaceutical and research plant in the world. Here the newest synthetic, medicinal chemicals are made in large quantities by improved processes, insuring purity and accuracy. Here also are extracted from the crude drugs the medicinal principles used largely throughout the pharmaceutical industry as well as by the medical profession.

Larger quarters will be provided for the extensive research work now being carried on by

a large staff of chemists and new buildings are being provided for the manufacture of the well-known Abbott pharmaceutical specialties.

The administrative office of The Abbott Lab-



oratories, located for many years in Ravenswood, will be moved about October 1st of this year to the new plant. The postoffice address will be Waukegan, Ill., 25 miles north of Chicago on the C. & N. W. R. R. About 24 acres of ground are owned by the Abbott Company to provide for the future expansion of their business.

G. D. SEARLE & CO. BUY RAVENSWOOD PLANT OF ABBOTT LABORATORIES

REAL ESTATE DEAL INVOLVING TWO RAPID GROWING PHARMACEUTICAL CONCERNS

G. D. Searle & Co., on Thursday, July 2, bought the Ravenswood plant of the Abbott Laboratories, at the southeast corner of Lawrence and Ravenswood avenues, for a reported \$300,000. The purchase was made through Dr. Claude H. Searle, president, and his son, J. G. Searle, treasurer, of the G. D. Searle & Co.

On or before October 1st the Abbott Laboratories will move to their new and larger quarters at North Chicago, which include a number of buildings on a twenty-four acre tract.

G. D. Searle and Company are manufacturers of scientific chemical and pharmaceutical products. This firm is an outgrowth of the old Searle and Hereth Company, established by Mr. G. D. Searle in 1888, and at present occupying their own building on Ravenswood avenue near Wilson, just a short distance from their new purchase. The remarkable growth of this concern made it necessary for them to seek more space, which fortunately was found close by.

The buildings occupy a ground space of 237x165 and will be used for offices, pharmaceutical manufacturing and shipping, also research department.

SUBSCRIBE TO THE LAY EDUCATIONAL FUND

IF THIS CONSTRUCTIVE WORK IS TO CONTINUE FUNDS MUST BE PROVIDED

The fund subscribed a year and a half ago by a comparatively few doctors, for the purpose of inaugurating the Lay Educational Bureau of the Illinois State Medical Society, is exhausted. Not one penny of the original fund was injudiciously spent. Results far-reaching in importance to the medical profession have thus far been accomplished by the Lay Educational Committee.

If the valuable work is to continue, additional money must be forthcoming. Second appeal for subscriptions for this worth while enterprise was mailed to members of the profession a short time ago.

The lay education campaign cannot be prosecuted without funds; it must be supported by popular subscription. It is hoped that every doctor will subscribe to this worthy cause. Serious disease diverted from the incompetent will result in the saving of thousands of lives and will prevent much permanent invalidism.

This campaign will achieve two great objectives. A gradual, but ultimate restoration of the medical profession to its merited place in the public sympathy and confidence and the inestimable benefits to humanity through the consequent prevention of disease and the preservation of life.

For the convenience of those who have mislaid their letter of appeal from the State Society, we hereby reproduce the pledge card:

Please sign and mail to the Illinois State Medical Society.

To the Officers of the Illinois State Medical Society and Members of the Council:

"I am in accord with the educational campaign, unanimously adopted by the House of Delegates of the Illinois State Society at the 1922 meeting and the plan recommended by the Council of the Society, and as evidence of my desire to cooperate with the officers of the council and of the State Society, I hereby enclose my check for \$..... to aid in defraying the expenses thereof:

MAKE CHECKS PAYABLE TO THE ILLINOIS STATE MEDICAL SOCIETY

Name M. D.
 Street
 City County

Sign the above pledge card, make out a check payable to the Illinois State Medical Society and mail both in an envelope addressed as follows:

From

ILLINOIS STATE MEDICAL SOCIETY,
 c/o Cashier, Sheridan Trust and Savings Bank,
 4738 Broadway, Chicago, Ill.

Below is a list of subscribers from Chicago and Cook County to the Lay Educational Fund as per letter recently sent physicians soliciting funds and cooperation.

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 I. F. Harter, Stronghurst
 Berton W. Hole, Springfield
 Hugh Hover, Galva
 A. E. Hubbard, Peoria
 N. C. Iknayan, Charleston
 W. L. Irwin, Plymouth
 H. H. Johnson, Casey
 J. T. Jenkins, Carthage
 Johnson Clinic, Rockford
 Solomon Jones, Danville
 Kankakee City Medical Society
 O. H. Kocher, Elgin
 C. R. Kerr, Chenoa
 R. P. Kile, Rockford
 Tom Kirkwood, Lawrenceville
 A. A. Knapp, Peoria
 L. C. Knight, Carthage
 F. J. Kotalik, Sherrard
 G. P. Noren, Kewanee
 Thos. H. Leonard, Springfield
 Herman Le Sauhier, Red Bud
 L. J. Linder, East St. Louis
 J. H. Long, Moline
 W. D. Madison, Eureka
 A. O. Magill, Decatur
 R. H. Maguire, St. David
 Marion County Medical Society
 H. L. Marshall, Stronghurst
 S. E. Matzke, Warsaw
 O. F. Maxon, Springfield
 W. H. Mercer, Taylorville
 B. V. McClanahan, Galesburg
 J. E. McCorvie, Peoria
 McDonough County Medical Society

J. C. McMillan, New Berlin
 R. C. McMillan, Monmouth
 F. D. McNertney, El Paso
 John J. McShane, Springfield
 F. E. McLugin, Thomson
 Glenn E. Mershon, Mt. Carroll
 John Miller, Warsaw
 J. E. Miller, Quincy
 R. E. Miltenberger, Spring Valley
 E. B. Montgomery, Quincy
 W. S. Morrison, Mazon
 J. R. Neal, Springfield
 C. S. Nelson, Springfield
 E. S. Nelson, Canton
 E. E. Nystrom, Peoria
 F. J. Otis, Moline
 G. C. Otrich, Belleville
 Geo. Thos. Palmer, Springfield
 Arthur Parsons, Geneseo
 Drs. Patton and Blair, Monmouth
 T. A. Pettepiece, Freeport
 Mather Pfeiffenberger, Atton
 W. A. Potter, Eureka
 Theo. S. Proxmire, Lake Forest
 H. C. Putman, Canton
 I. D. Rawlings, Springfield
 E. W. Reagan, Canton
 L. S. Reavley, Sterling
 Henry Reis, Belleville
 J. J. Rendelman, Cairo
 D. C. Roach, Burlington
 R. T. Roadway, Roanoke
 W. R. Roberts, Cissna Park
 Rock Island County Medical Society
 Mary L. Rosensteel, Freeport
 Mary A. Sagner, Thomson
 Sangamon County Medical Society
 E. F. Scheve, Mascoutah
 P. S. Scholes, Canton
 W. H. Scott, Dallas City

F. C. Schurmeier, Elgin
 W. E. Shallenberger, Canton
 A. M. Shaw, Adrian
 Claude F. Shronts, Momence
 W. N. Sievers, White Heath
 E. Grant Simpson, Naperville
 C. S. Skaggs, East St. Louis
 C. N. Stephens, Goldstone
 C. D. Snively, Ipava
 Karl Snyder, Freeport
 John Huston Spyker, Decatur
 O. O. Stanley, Decatur
 P. H. Stoops, Ipava
 A. F. Stotts, Galesburg
 Harold Swanberg, Quincy
 C. D. Swickard, Charleston
 H. R. Sword, Milledgeville
 R. Tharp, East St. Louis
 G. Taphorn, Alton
 J. S. Templeton, Pinckneyville
 Chas. D. Thomas, Peoria
 L. M. Thompson
 T. H. Trainor, Maple Park
 Edward Tripple, O'Fallon
 Oscar W. Tulisalo, Rockford
 H. M. Voris, East St. Louis
 T. H. Wagner, Joliet
 Geo. A. Wash, Gibson City
 L. J. Weir, Marshall
 Whiteside County Medical Society
 R. R. Whiteside, Moline
 F. W. Wilcox, Minook
 E. C. Williams, Downs
 A. A. Wilson, Davis
 L. H. Wiman, LaMoille
 Winnebago County Medical Society
 C. E. Woodward, Decatur
 C. F. Woodward, Decatur
 Nelson A. Wright, Manito
 W. T. Zeigler, Canton

LAST CALL FOR DATA FOR THE MEDICAL HISTORY OF ILLINOIS. SEND IN AT ONCE ANY OTHER MATERIAL YOU MAY HAVE OR CAN SECURE

We present the following account of the respective county histories relating to Medical History in the State of Illinois which are available now in the Chicago Historical Library.

These histories are listed with verbatim copies of their titles, authors, publishers and dates of publication. The volumes cover a period from the beginning of settlement up until about 1880. There is a dearth of material on some of the counties.

In case any of our readers have information other than that scheduled above that relates to medical history in the State of Illinois, we will appreciate your sending it in to the committee on Medical History, 6244 North Campbell Ave., Chicago.

Quincy and Adams County history and representative men. David F. Wilcox, ed. Chicago and New York, The Lewis publishing company, 1919.

The genesis of Adams county, by William D. Barge. The history of Adams County, Illinois. Chicago, Murray, Williamson and Phelps, 1879.

The genesis of Alexander County, by William D. Barge.

History of Alexander, Union and Pulaski counties,

Illinois. Ed. by William Henry Perrin. Chicago, O. L. Baskin & Co., historical publishers, 1883.

Portrait and biographical record of Montgomery and Bond counties, Illinois. Chicago, Chapman Bros., 1892.

The genesis of Bond County, by Wm. D. Barge. History of Bond and Montgomery counties, Illinois.

Ed. by William Henry Perrin. Chicago, O. L. Baskin & Co., historical publishers, 1882.

The past and present of Boone County, Illinois. Chicago, H. F. Kett & Co., 1877.

The genesis of Boone County, by William D. Barge. Combined history of Schuyler and Brown counties, Illinois. Phil. W. R. Brink & Co., 1882.

The Brown County ossuary (in Illinois State Historical Society Journal, 1908, v. 1, p. 33-43), by Snyder, J. F.

The genesis of Brown County, by Wm. D. Barge.

Map of Bureau County with sketches of its early settlement. Chicago, Tribune Company, 1867.

Beautiful Bureau. A collection of photographic reproductions of the picturesque, historical or otherwise interesting scenes of Bureau County, Illinois, by C. W. Skilling and C. H. Masters. Princeton, Illinois, 1894.

The voters and tax-payers of Bureau County, Illinois. Containing also a biographical directory. Chicago, H. F. Kett & Co., 1877.

The genesis of Bureau County, by William D. Barge. History of Bureau County, Illinois. Chicago, World Pub. Co., 1885. Bradsby, H., ed.

Reminiscences of Bureau County, Illinois, by N. Matson. Princeton, Ill., Republican Book and Job Office, 1872.

Calhoun County business directory for 1869-70. Battle Creek, Mich., E. G. Rust, 1869.

Portrait and biographical album of Pike and Calhoun

counties, Illinois. Chicago, Biographical publishing co., 1891.

The genesis of Calhoun County, by William D. Barge.

The genesis of Carroll County, by William D. Barge.

The history of Carroll County, Illinois. Chicago, H. F. Kett & Co., 1878.

Some beginnings in central Cass County, Illinois (in Journal of the Illinois state historical society, 1917, v. 9, p. 470-482).

County seat battles of Cass County, Illinois (in Illinois state historical society Journal, 1914, v. 7, p. 166-194).

The genesis of Cass County, by Wm. D. Barge.

Early history of the "Sangamon County," being notes on the first settlements in the territory now comprised within the limits of Morgan, Scott and Cass counties. Davenport, Iowa, 1873.

History of Cass County, Illinois. Chicago, O. L. Baskin & Co., 1882.

Historical sketch of Cass County, Illinois: an oration delivered July 4, 1876, at Beardstown, Ill. Beardstown, Ill. "Cas County messenger," 1876.

The genesis of Champaign County by Wm. D. Barge.

A history of the early settlement of Champaign County, Ill., by J. O. Cunningham. Urbana, Illinois, 1876. Pub. in the Champaign County Herald.

History of Champaign County, Illinois. Philadelphia, Brink, McDonough & Co., 1878.

Portrait and biographical record of Christian County, Illinois. Chicago, Lake City publishing co., 1893.

History of Christian Co., Ill. Philadelphia, Edwardsville, Ill., Brink, McDonough & Co., 1880.

The genesis of Christian county, Illinois, by Wm. D. Barge.

The genesis of Clark County, by Wm. D. Barge.

History of Crawford and Clark counties, Illinois. Ed. by Wm. Henry Perrin. Chicago, O. L. Baskin & Co., Historical Publishers, 1883.

History of Wayne and Clay Counties, Illinois. Chicago, Globe pub. co., 1884.

The genesis of Clay County, by Wm. D. Barge.

History of Marion and Clinton Counties, Illinois. Philadelphia, Brink, McDonough & Co., 1881.

Portrait and biographical record of Clinton, Washington, Marion and Jefferson Counties, Illinois. Chicago, Chapman publishing co., 1894.

The genesis of Clinton County, by William D. Barge.

The genesis of Coles County, by Wm. D. Barge.

The history of Coles County, Illinois. Chicago, W. LeBaron, jr., & Co., 1879.

The genesis of Crawford County, by Wm. D. Barge.

History of Crawford and Clark counties, Illinois. Ed. by Wm. Henry Perrin. Chicago, O. L. Baskin & Co., Historical publishers, 1883.

The genesis of Cumberland County, by Wm. D. Barge.

Counties of Cumberland, Jasper and Richland, Illinois. Historical and biographical. Chicago, F. A. Battery & Co., 1884.

DeKalb County Old Settlers' association. Miscellaneous pamphlets.

The voters and tax-payers of DeKalb County, Illinois; containing also a biographical directory. Chicago, H. F. Kett & Co., 1876.

The genesis of DeKalb County, by William D. Barge.

History of DeKalb County, Illinois. Chicago, O. P. Bassett, 1868.

Portrait and biographical album of DeKalb County, Illinois. Chicago, Chapman brothers, 1885.

History of DeWitt County, Illinois. By W. R. Brink & Co., 1882, Philadelphia.

Portrait and biographical album of DeWitt and Piatt counties, Illinois. Chicago, Chapman bros., 1891.

The genesis of DeWitt County. By William D. Barge.

Douglas Co. Illinois historical; editors, Newton Bateman, Paul Selby. Douglas County biographical; editor, John W. King. Chicago, Munsell pub. co., 1910.

The genesis of Douglas Co., by Wm. D. Barge.

Slavery in Douglas County (in State hist. soc. Journal, 1918), by Reat, J. L.

History of DuPage County, Illinois. Comp. under the direction and supervision of the Board of supervisors, 1876. Aurora, Ill., Knickerbocker & Hodder, 1877.

History of DuPage County, Illinois, by Rufus Blanchard. Chicago, O. L. Baskin & Co., 1882.

DuPage Co., Ill. Blodgett, Henry W. Autobiography. Waukegan, 1906.

A history of the county of DuPage, Illinois; containing some account of its early settlement. By C. W. Richmand & H. F. Vallette. Chicago, Steam presses of Scripps, Bross & Spears, 1857.

The genesis of Edgar County. By Wm. D. Barge.

The history of Edgar County, Illinois. Chicago, Wm. LeBaron, jr., & co., 1879.

Letters from Illinois; illustrated by a map of the United States, showing Mr. Birbeck's journey from Norfolk to Illinois and a map of English Prairie and the adjacent country, by John Melish. Phil. M. Carey and son, 1818.

Combined history of Edwards, Lawrence and Wabash counties, Ill., with biographical sketches. Philadelphia, J. L. McDonough & Co., 1883.

History of the English settlement in Edwards County, Illinois, founded in 1817 and 1818, by Morris Birbeck and George Flower. By George Flower. Chicago, Fergus printing company, 1882.

History of the English settlement in Edwards County, Illinois, founded in 1817 and 1818, by Morris Birbeck and George Flower. (Chicago Historical society's collection, v. 1.)

History of the English Settlement in Edwards County, Illinois. (Clippings from the Albion Register, 1911-1912.)

Letters from Lexington and the Illinois, containing a brief account of the English settlement in the latter territory and a refutation of the misrepresentations of Mr. Cobbett, by Richard Flower. London, Printed by C. Teulon, for J. Ridgway, 1819.

Letters from the Illinois, 1820-21; containing some account of the English settlement at Albion and its vicinity, and a refutation of various misrepresentations, those more particularly of Mr. Cobbett; with a letter from M. Birbeck, and a preface and notes by Benjamin Flower. London, James Ridgway, 1822.

Personal narrative of travels in Virginia, Maryland, Pennsylvania, Ohio, Indiana, Kentucky; and of a residence in the Illinois territory: 1817-1818, by Elias Pym Fordham; with facsimiles of the author's sketches and plans; ed. by Frederic Austin Ogg. Cleveland, The A. H. Clark company, 1906.

Two years' residence in the settlement on the English prairie, in the Illinois country. By John Woods (1820-21). London, Longman, Hurst, Rees, Orme, and Brown, 1822.

The genesis of Edwards County, by Wm. D. Barge.

The Edwards County centennial celebration, Albion, Illinois, September 18, commemorating the centenary of the statehood of Illinois, the centenary of the beginning of the English settlement of Edwards County, the centenary of the founding of Albion. Comp. by Walter Colyer. Albion, Ill., Albion register print, 1918.

The genesis of Effingham County, by Wm. D. Barge.

History of Effingham County, Illinois. Edited by Wm. Henry Perrin. Chicago, O. L. Baskin & Co., 1883.

Genesis of Fayette County. By Wm. D. Barge.

Historical Encyclopedia of Illinois, ed. by Newton Bateman, LL.D., Paul Selby, A.M.; and history of Fayette County, ed. by Robert W. Ross, John J. Bullington. Chicago, Munsell publishing company, 1910.

The genesis of Ford County, by Wm. D. Barge.

The genesis of Franklin County, by Wm. D. Barge.

Scrap-book of Fulton County, Ill. (Lewistown weekly Republican, October 1, 1897.)

The genesis of Fulton County, by Wm. D. Barge.

History of Fulton County, Illinois. C. C. Chapman & Co., 1879.

Genesis of Gallatin County. By William D. Barge.

The genesis of Greene County. By William D. Barge.

Greene County: born 100 years ago (in Ill. state hist. soc. Journal, 1920), by Bradshaw, Charles.

Historical Encyclopedia of Illinois, ed. by Newton Bateman, LL.D., Paul Selby, A.M., and history of Grundy County (historical and biographical) by special authors and contributors. Chicago, Munsell publishing company, 1914.

Historical oration delivered at Morris, Ill., July 4th, 1876. Morris, Ill., Reformer office, 1876.

The genesis of Grundy County, by William D. Barge.

History of Grundy County, Illinois. Chicago, O. L. Baskin & Co., 1882.

The genesis of Hamilton County. By William D. Barge.

History of Hancock County, Illinois. By Th. Gregg. Chicago, C. C. Chapman & Co., 1880.

The genesis of Hancock County. By Wm. D. Barge.

Historical Encyclopedia of Illinois, ed. by Newton Bateman, Paul Selby, J. S. Currey; and History of

Hancock County, ed. by C. J. Scofield. Chicago, Munsell pub. co., 1921.

The Biographical Review of Johnson, Massac, Pope and Hardin counties, Illinois. Chicago, Biographical publishing co., 1893.

The genesis of Hardin County, by Wm. D. Barge.

Recollections of pioneer and army life, by Matthew H. Jamison, lieutenant E company, Tenth regiment, Illinois veteran volunteer infantry. Kansas City, Hudson press (1911).

The genesis of Henderson County, by Wm. D. Barge.

History of Mercer and Henderson Counties, together with biographical matter, statistics, etc. Chicago, H. H. Hill and company, 1882.

The history of Henry County, Illinois, its tax-payers and voters; containing, also, a biographical directory. Chicago, H. F. Kett & Co., 1877.

Henry Co., Ill. History. A scrap book.

Old Settlers' reunion. Iroquois, August 13th, 14th and 15th, 1879. Iroquois County Times print.

Portrait and biographical record of Iroquois County, Illinois. Chicago, Lake city publishing co., 1893.

The genesis of Iroquois County, by William D. Barge.

History of Iroquois County. By H. H. Beckwith. Chicago, H. H. Hill and company, 1880.

History of Jackson County, Ill. Philadelphia, Brink, McDonough & Co., 1878.

The genesis of Jackson County, by Wm. D. Barge.

Counties of Cumberland, Jasper and Richland, Illinois. Historical and biographical. Chicago, F. A. Battery & Co., 1884.

Portrait and biographical record of Clinton, Washington, Marion and Jefferson counties, Illinois. Chicago, Chapman publishing co., 1894.

The genesis of Jefferson County. By William D. Barge.

History of Jefferson County, Illinois. Ed. by Wm. Henry Perrin. Chicago, Globe publishing co., 1883.

Historical sketch of Jersey County, Illinois. Delivered at Jerseyville, July 4, 1876. Jacksonville, Ill., Courier printing house, 1876.

Index of historical sketch of Jersey County, Ill., by B. B. Hamilton, Jacksonville, Ill., 1876.

History of Greene and Jersey Counties, Illinois. Continental historical co., Springfield, Ill., 1885.

Address of Hon. S. V. White, delivered at Chautauqua, Ill., July 19, 1900, reminiscences of Jersey County, Ill., from 1835 to 1850.

The genesis of Jersey County. By William D. Barge.

An economic and social study of the lead region in Iowa, Illinois and Wisconsin. By O. G. Libby, and others.

Mines of Jo Daviess county (in Ill. state hist. lib. Publications, 1903).

Business Directory of Jo Daviess County, Illinois. Galena, Ill., D. W. Scott, 1866.

The genesis of Jo Daviess County. By William D. Barge.

The history of Jo Daviess County, Illinois, also a

biographical directory of its citizens. Chicago, H. F. Kett & Co., 1878.

The Biographical review of Johnson, Massac, Pope and Hardin counties, Illinois. Chicago Biographical publishing co., 1893.

The genesis of Johnson County, Illinois, by Wm. D. Barge.

A Tribute from the Koregraphic organization to Kane County, Ill. Aurora, Ill. Aurora daily beacon, 1892.

Military History of Kane County, Illinois (in Ill. state historical society Journal, 1915).

Commemorative biographical and historical record of Kane county, Illinois. By Pliny A. Durant and others. Chicago, Beers, Leggett & co., 1888.

Commemorative portrait and biographical record of Kane and Kendall counties, Illinois. Chicago, Beers, Leggett & Co., 1888.

DeKalb County manufacturer; containing material on Kane Co. DeKalb, Ill., Chronical press and bindery.

Art work of Kane County, Illinois. Chicago, Gravure illustration company, 1918.

The genesis of Kane County. By William D. Barge.

Historical encyclopedia of Illinois, ed. by Newton Bateman, Paul Selby, and History of Kane County, Illinois, ed. by J. S. Wilcox. Chicago, Munsell Pub. co., 1904.

The past and present of Kane County, Illinois. Chicago, Wm. LeBaron, jr., & Co., 1878.

Proceedings of the Kane County bar relative to the circuit judge.

The genesis of Kankakee County. By William D. Barge.

Biographical directory of the voters and tax-payers of Kendall County, Illinois. Chicago, G. Fisher & Co., 1876.

The genesis of Gendall Co., by Wm. D. Barge.

History of Kendall Co., Illinois, from the earliest discoveries to the present time. Aurora, Ill., Knickerbocker & Hodder, 1877, by Hiske, E.

Portrait and biographical album of Knox County, Illinois. Chicago, Chapman Brothers, 1886.

The Genesis of Knox County, by Wm. D. Barge.

Centennial annals of Knox County, Illinois, 1818-1819; arranged and presented to the Rebecca Parke chapter, Daughters of the American Revolution, Galesburg, Illinois, by Ella Parke Lawrence (Mrs. Geo. A.).

History of Knox County, Illinois; record of its volunteers in the late war, and biographical sketches, by Chas. C. Chapman & Co., Chicago, Blakely, Brown & Marsh, printers, 1878.

A history of Lake County, Illinois, by John J. Halsey, editor; C. C. Travey, projector. Philadelphia, R. C. Bates, 1912.

History of Lake County. Chicago, Munsell publishing company.

The past and present of Lake County, Illinois, containing a history of the county; a biographical directory, war record, early settlers, statistics, history of Illinois, the Northwest. Chicago, Wm. LeBaron & Co., 1877.

Old Settlers' association of LaSalle Co., Ill. Annual reunion and picnic of the Old Settlers' association of LaSalle County. Clippings from the Ottawa Republican, Aug. 26, 1875; Aug. 23, 1877; Aug. 31, 1882; Sept. 3, 1891; Aug. 30, 1894.

History of LaSalle Co., Illinois. Its topography, geology, botany, natural history, history of the Mound builders, Indian tribes, French explorations, and a sketch of the pioneer settlers of each town to 1840, with an appendix, giving the present status of the county, its population, resources, manufactures and institutions, by Elmer Baldwin. Chicago, Rand, McNally & Co., printers, 1877.

History of LaSalle County, Illinois, and biographies of representative citizens. Also a condensed history of Illinois. Chicago, Inter-state publishing co., 1886.

The past and present of LaSalle County, Illinois, containing a history of the county—its cities, towns, &c., a biographical directory of its citizens, war record of its volunteers in the late rebellion, portraits of early settlers & prominent men, general and local statistics, map of LaSalle County, history of Illinois, Constitution of the United States, miscellaneous matters, etc., etc. Chicago, H. F. Kett & Co., 1877.

Keyes, Robert F. comp. LaSalle County general directory for 1872-3. Pub. by R. F. Keyes & Co., comp. by Robert F. Keyes. Joliet, Ill., Joliet Republican steam printing house, 1872.

LaSalle Co., Ill., Directory. Chicago, W. H. Rand, book and job printer, 1865.

The genesis of LaSalle County. By William D. Barge.

The genesis of Lawrence County. By William D. Barge.

Combined history of Edwards, Lawrence and Wabash Counties, Ill., with illustrations descriptive of their scenery and biographical sketches of some of their prominent men and pioneers. Philadelphia, J. L. McDonough & Co., 1883.

Historical Notes on Lawrence County, Illinois (in Ill. state hist. soc. Journal, 1917.) White, M. T.

Clippings on the history of Lee County. (From the Dixon Weekly Citizen, May 28, 1914.)

History of Dixon and Lee County: chronological record showing the current events and many interesting reminiscences. Biography of Father Dixon. Sketch of our first schools by Dr. Oliver Everett: a full list of soldiers that left Dixon for the war of the rebellion, etc. Dixon, Ill., Dixon Telegraph print. 1880. Cover title: History of Dixon and Palmyra from 1827 to 1880.

History of Dixon and Lee County. A retrospective sketch of the past, a bird's-eye view of the present, and a glimpse at the future. Dixon, Ill., Telegraph and herald co., printers, 1870.

Early Lee County; being some chapters in the history of the early days in Lee County, Illinois, by William D. Barge. Chicago, Barnard & Miller, printers, 1918.

Historical Encyclopedia of Illinois, ed. by Newton Bateman, L.I.D., Paul Selby, A. M.; and history of

Lee County, ed. by Mr. A. C. Bardwell. Chicago, Munsell Publishing Company, 1904.

The genesis of Lee County. By William Barge.

History of Lee county, Ill., with biographical matter, statistics, etc. Chicago, H. H. Hill and Co., 1881.

Romantic villages of northern Illinois by McIlvaine, Caroline Margaret.

Recollections of the pioneers of Lee County. Dixon, Ill., Inez A. Kennedy, 1893. Published for the Lee County Columbian Club.

The genesis of Livingston County. By William D. Barge.

Historical sketch of the baptist denomination in Livingston County. (In Illinois state hist. soc. Journal, 1918.) By Benden, Edwin.

The history of Livingston county, Illinois, directory, war record, portraits of early settlers and prominent men. Statistics. Chicago, W. LeBaron, jr., & Co., 1878.

Livingston county historical association Bulletin no. 1. Pontiac, Kiwanis club, 1925.

The biographical record of Logan county, Illinois. Chicago, The S. J. Clarke publishing company, 1901.

The genesis of Logan County. By William D. Barge.

History of Logan County, Illinois; its past and present, containing a biographical directory, war record, portraits of early settlers, statistics. Chicago, Donnelly. Loyd & co., 1878.

The American pioneer, a monthly periodical, devoted to the objects of the Logan historical society: or, to collecting and publishing sketches relative to the early settlement and successive improvement of the country. v.1.2; Jan., 1842-Oct., 1843. Cincinnati, O., J. S. Williams, 1842-43.

Pioneers of Macon County and the civil war. (In Ill. state hist. soc. Journal, 1923). Baker, N. M.

The genesis of Macon County. By William D. Barge.

History of Macon County, Illinois; with illustrations descriptive of its scenery, and biographical sketches of some of its prominent men and pioneers. Phil., Brink, McDonough & Co., 1880.

History of Macon County, Illinois, from its organization to 1876. By John W. Smith. Springfield, Rokker's printing house, 1876.

History of Macoupin County, Illinois, and biographical sketches of some of its prominent men and pioneers. Philadelphia, Brink, McDonough & Co., 1879.

Biographical record of leading citizens of Macoupin County, Illinois. Chicago, Richmond & Arnold, 1904.

The genesis of Macoupin County. By William D. Barge.

History of Madison County, Illinois. With biographical sketches Edwardsville, Ill. W. R. Brink & Co., 1882.

Souvenir program: the historical pageant of Madison County; written and produced by Thomas Wood Stevens, Edwardsville, Illinois, September 17, 18, 19, 1912.

Madison Co., Ill. Centennial celebrations, etc. Edwardsville intelligencer. Edwardsville intelligencer.

Madison County centennial edition, 1912. Issued as a special number of the Edwardsville Intelligencer, Aug. 31, 1912.

Gazetteer of Madison County, containing historical and descriptive sketches of Alton City, Upper Alton. Edwardsville and other towns, including some account of the resources of the various townships. Alton, Ill., comp. and pub. by James T. Hair, 1866.

The genesis of Madison County by Wm. D. Barge. Madison Co., Ill. History. A memoir of Nathaniel Buckmaster, who was born in Calvert County, Maryland. By Mrs. Catherine Buckmaster Curran. Alton, Ill., 1914.

Madison County, Ill. History. Lewis and Clark at the mouth of Wood river. (In Ill. state hist. soc. Journal, 1920.)

Report to the thirty-third general assembly, concerning the use of the state militia in suppressing riots and preserving the peace, in Madison and St. Clair Counties in May, 1883. Springfield, Ill., 1883.

Madison Co., Ill. Sources. "Letter from Gov. Edward Coles to the late Senator W. C. Flagg—Early settlements in Madison County." From the Alton daily times, July 25 & 28, and Aug. 19, 1910.

History of Marion and Clinton counties, Illinois. With biographical sketches. Philadelphia, Brink, McDonough & Co., 1881.

Portrait and biographical record of Clinton, Washington, Marion and Jefferson Counties, Illinois. Chicago, Chapman publishing Co., 1894.

The genesis of Marion County. By Wm. D. Barge. Brinkerhoff's history of Marion County, Illinois. By Prof. J. H. G. Brinkerhoff. Indianapolis, Ind., Bowen & Co., 1909.

Genesis of Marshall County. By William D. Barge. Records of the olden time; or Fifty years on the prairies. Embracing sketches of the discovery, exploration and settlement of the country. Lacon, Ill. Home Journal steam printing establishment, 1880.

History of Putnam and Marshall counties, embracing an account of the settlement of Bureau and Stark counties. By Ford, Henry A. Lacon, Ill., The author, 1860.

Centennial history of Mason County, including a sketch of the early history of Illinois. By Joseph Cochrane. Springfield, Ill., Rokker's steam and printing house, 1876.

The genesis of Mason County. By William D. Barge.

The history of Menard and Mason counties, Illinois. Chicago, O. L. Baskin & Co., 1879.

Pioneers of Menard and Mason counties. By Onstot, T. G. Forest City, Ill., T. G. Onstot, 1902.

No history on Massac County except three books giving a history of Fort Massac.

The genesis of McDonough County. By Wm. D. Barge.

History of the underground railroad in McDonough County, Ill. (In Ill. state hist. soc. Journal.)

History of McDonough County, Illinois. Springfield, Ill., D. W. Lusk, 1878.

Biographical directory of the tax-payers and voters of McHenry County; containing also a historical sketch of the county. Chicago, C. Walker & Co., 1877.

History of McHenry County, Illinois, together with biographies of representative citizens. Chicago, Interstate publishing co., 1885.

The genesis of McHenry County, Illinois by Wm. D. Barge.

An ancient Indian fort; some account of its history, with an outline of the works. Bloomington, Ill., 1881.

The preparation and spinning of flax and wool. As practiced by the pioneers of central Illinois. By Milo Custer. Bloomington, Ill., 1912.

McLean County Historical society. (Miscellaneous pamphlets.)

Historical encyclopedia of Illinois ed. by Newton Bateman, LL.D., Paul Selby, A.M.; and history of McLean County, ed. by Ezra M. Prince, John H. Burnham. Chicago, Munsell Publishing Company, 1908.

A gazetteer of McLean County, containing historical and descriptive sketches. Comp. and pub. by Bailey & Hair. Chicago, J. C. W. Bailey, printer, 1866.

Gould's McLean County directory for 1875-76. Bloomington, Ill., D. B. Gould.

The genesis of McLean County by Wm. D. Barge.

Historical Encyclopedia of Illinois, ed. by Newton Bateman, LL.D., Paul Selby, A.M.; and history of McLean County, edited by Ezra M. Prince, John H. Burnham. Chicago, Munsell Publishing Co., 1908.

The Good Old Times in McLean County, Illinois, containing sketches of Old Settlers, a complete historical sketch of the Black Hawk War, and all matters of interest relating to McLean County. Written by Dr. E. Duis. Bloomington, The Leader publishing company, 1874.

The history of McLean County, Illinois. Chicago, Wm. LeBaron, jr., & Co., 1879.

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The genesis of Menard County. By Wm. D. Barge.

The history of Menard and Mason Counties, Illinois. Chicago, O. L. Baskin & Co., 1879.

Pioneers of Menard and Mason counties; by T. G. Onstot. Forest City, Ill., T. G. Onstot, 1902.

The genesis of Mercer County. By Wm. D. Barge.

History of Mercer and Henderson Counties. Chicago, H. H. Hill and company, 1882.

The genesis of Monroe County. By William D. Barge.

Combined history of Randolph, Monroe and Perry counties, Ill. Philadelphia, J. L. McDonough & Co., 1883.

A Woman's story of pioneer Illinois, by Christiana Holmes Tillson; ed. by Milo Milton Quaife. Chicago, R. R. Donnelly & Sons company, 1919.

Portrait and Biographical record of Montgomery and Bond counties, Illinois. Chicago, Chapman bros., 1892.

The genesis of Montgomery County. By Wm. D. Barge.

History of Bond and Montgomery Counties, Illinois, ed. by Wm. Henry Perrin. Chicago, O. L. Baskin & Co., 1882.

Early history of the "Sangamon Country"; being notes on the first settlements in the territory now comprised within the limits of Morgan, Scott and Cass Counties. Davenport, Iowa, 1873.

Historic Morgan and Classic Jacksonville, comp. in 1884-'85. By Charles M. Eames. Jacksonville, Ill., printed at the Daily journal printing office, 1885.

History of Morgan County, Illinois; its past and present. Chicago, Donnelly, Loyd and Co., 1878.

The genesis of Morgan County. By Wm. D. Barge.

The genesis of Moultrie County. By Wm. D. Barge.

Combined history of Shelby and Moultrie counties, Illinois. Philadelphia, Edwardsville, Ill., Brink, McDonough & Co., 1881.

Clippings on Ogle County. (Tri-County Press.) March 25, 1915.

The history of Ogle county, Illinois. Chicago, H. F. Kett & Co., 1878.

The genesis of Ogle County. By Wm. D. Barge.

Sketches of the history of Ogle County, Ill. Written for the Polo advertiser. Polo, Ill., H. R. Ross, 1859.

Romantic villages of northern Illinois. McIlvaine, Caroline Margaret.

The history of Peoria County, Illinois. Chicago, Johnson & Company, 1880.

The genesis of Perry County, Illinois. By Wm. D. Barge.

Combined history of Randolph, Monroe and Perry Counties, Illinois. Philadelphia, J. L. McDonough & Co., 1883.

History of Piatt Co. Chicago, Shepard & Johnston, printers, 1883.

Portrait and biographical album of DeWitt and Piatt Cos., Ill. Chicago, Chapman bros., 1891.

The genesis of Piatt County. By William D. Barge.

History of Pike County, Illinois. Chicago, C. C. Chapman & Co., 1880.

Portrait and biographical album of Pike and Calhoun counties, Ill.

The genesis of Pike county, by Wm. D. Barge.

Pike County settled 1820 (in Ill. state hist. soc. Journal, 1920.)

The biographical review of Johnson, Massac, Pope and Hardin Counties, Illinois. Chicago, Biographical publishing co., 1893.

The genesis of Pope County. By Wm. D. Barge.

History of Massac County, Illinois. By O. J. Page. Metropolis, 1900.

The genesis of Pulaski County. By Wm. D. Barge.

History of Alexander, Union and Pulaski counties, Illinois, ed. by Wm. Henry Perrin. Chicago, O. L. Baskin & Co., 1883.

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Records of the olden times; or Fifty years on the

prairies. Lacon, Ill., Home journal steam printing establishment, 1880.

History of Putnam and Marshall Counties. Lacon, Ill., Ford, Henry A., author, 1860.

First two counties of Illinois and their people. (In Illinois historical soc. pub. no. 22 p. 35-42.)

A directory, business mirror and historical sketches of Randolph. Alton, Ill., Courier printing house, 1859.

The genesis of Randolph County. By Wm. D. Barge.

Combined history of Randolph, Monroe and Perry counties, Ill. Philadelphia, J. L. McDonough & Co., 1883.

The genesis of Richland County. By Wm. D. Barge.

Counties of Cumberland, Jasper and Richland, Illinois. Historical and biographical. Chicago, F. A. Battery & Co., 1884.

The genesis of Rock Island County. By Wm. D. Barge.

A history of Rock Island arsenal, by Major D. W. Flagler. Washington, Govt. printing off., 1877.

Early Rock Island, by Wm. A. Meese. Published under the auspices of the Rock Island County historical society. Moline, Ill., Press of Desaulniers & co., 1905.

The genesis of Saline County. By Wm. D. Barge.

Babeuf's Directory of the city of Springfield and Sangamon Co., Illinois. Springfield, Babeuf.

Springfield city directory, and Sangamon County advertiser, for 1855-6. Comp. by E. R. Hall. First publication. Springfield, Birchall & Ogen, 1855.

History of the early settlers of Sangamon County, Illinois. By John Carroll Power, assisted by his wife, Mrs. S. A. Power. Under the auspices of the old settlers society. Springfield, Ill., E. A. Wilson & Co., 1876.

The genesis of Sangamon County. By Wm. D. Barge.

History of Sangamon County, Illinois. Chicago, Inter-state pub. co., 1881.

Historical encyclopedia of Illinois, ed. by Newton Bateman, II.D., Paul Selby, A.M.; and history of Schuyler County, ed. by Howard F. Dyson. Chicago, Munsell publishing Company, 1908.

The genesis of Schuyler Co. By Wm. D. Barge.

Combined history of Schuyler and Brown Counties, Illinois. Philadelphia, W. R. Brink & Co., 1882.

Early history of the "sangamon Country": being notes on the first settlements in the territory now comprised within the limits of Morgan, Scott and Cass Counties. Davenport, Iowa, 1873.

The genesis of Scott County. By Wm. D. Barge.

Historical sketch of Scott County, Illinois, by N. M. Knapp. Winchester, Ill., Times job printing house, 1876.

Combined history of Shelby and Moultrie Counties, Illinois. Philadelphia, Edwardsville, Ill., Brink, McDonough & Co., 1881.

Historic sketch and biographical album of Shelby Co., Ill. Shelbyville, Ill., The Wilder publishing company, 1900.

The genesis of Shelby County, by Wm. D. Barge.

Some side lights of the early history of Stark County, Ill. (In Ill. state hist. soc. Journal.)

An address delivered before the Old Settlers association of Stark County, Illinois, at Toulon, Sept. 7, 1892, by Todd, J. F.

Documents and biography pertaining to the settlement and progress of Stark County, Illinois, relating to Indian history, original settlement, organization and politics. Chicago, M. A. Leeson & Co., 1887.

Two pioneer doctors. (In Ill. state hist. soc. Journal, 1920), by Sandham, W. R.

The genesis of Stark County. By Wm. D. Barge.

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History of St. Clair, Illinois, with biographical sketches. Philadelphia, Brink, McDonough & Co., 1881.

First two counties of Illinois and their people. (In Illinois historical society. Pub. no. 22, p. 35-42.)

Portrait and Biographical record of St. Clair County, Ill. Chicago, Chapman bros., 1892.

The genesis of St. Clair County. By William D. Barge.

Historical encyclopedia of Illinois; ed. by Newton Bateman and Paul Selby; and history of St. Clair County; ed. by A. S. Wilderman and A. A. Wilderman. Chicago, Munsell pub. co., 1907.

Illinois state historical library Publications, 1905.

History of St. Clair County, Illinois. Prepared for the County centennial celebration of American Independence, July 4th, 1876. Bellesville, Ill., "Advocate" steam printing house, 1876.

Historical sketch of Stephenson County, Ill. (Freeport Journal, supplement, July 5, 1876.

Freeport and Stephenson County directory, 1898-99. Freeport directory company, compilers. Freeport, Ill., W. H. Wagner & Sons, printers, 1898.

Freeport city and Stephenson County directory, 1892-3. Chicago, U. S. central pub. co.

Freeport city directory, Stephenson gazetteer and farmers' and land owners' directory, also a classified business directory of Stephenson County, Illinois, 1889-90. Upper Alton, Ill., J. E. Ross & Co.

The History of Stephenson County, Illinois. Chicago, Western historical co., 1880.

Sketches of the history of Stephenson County, Ill., written for the editor of the Freeport bulletin. Freeport, Ill. Printed and published by J. O. P. Burnside.

Rockford and Freeport general and business directories for the year 1857. Chicago, Hall & McEvoy, 1857.

The genesis of Stephenson County. By William D. Barge.

The genesis of Tazewell County. By William D. Barge.

The Genesis of the courts of Tazewell county, Illinois. (In Ill. state hist. soc. Journal, 1913.)

The genesis of Union County. By William D. Barge.

History of Alexander, Union and Pulaski counties,

Ill. Ed. by William Henry Perrin. Chicago, O. L. Baskin & Co., 1883.

History of Vermilion county, together with historic notes on the northwest. Chicago, H. H. Hill & Co., 1879.

Danville city directory for 1889, to which is added a complete business directory of Vermilion County.

Compiled and published by Norvell & Graham. Danville, Ill., Oscar Freese, printer, 1889.

The past and present of Vermilion County, Illinois. Chicago, The S. J. Clarke publishing co., 1903.

The genesis of Vermilion County. By Wm. D. Barge.

Combined history of Edwards, Lawrence and Wabash Counties, Ill. Philadelphia, J. L. McDonough & Co., 1883.

Pioneers of Wabash county. (In Ill. state hist. soc. Journal, 1919.)

The genesis of Wabash County. By Wm. D. Barge. Historical sketch of Wabash county, Illinois. (In Ill. state hist. soc. Journal, 1918.)

The past and present of Warren County, Illinois. Chicago, H. K. Kett & Co., 1877.

The genesis of Warren County. By William D. Barge.

Portrait and biographical record of Clinton, Washington, Marion and Jefferson counties, Illinois. Chicago, Chapman publishing co., 1894.

The genesis of Washington County. By Wm. D. Barge.

History of Wayne and Clay Counties, Illinois. Chicago, Globe pub. co., 1884.

The genesis of Wayne County. By William D. Barge.

History of White County, Ill. Chicago, Inter-state pub. co., 1883.

The genesis of White County. By Wm. D. Barge.

History of Whiteside County, Illinois. Ed. by Chas. Bent. Morrison, Ill. (Clinton, Ia., L. P. Allen, printer), 1877.

The biographical record of Whiteside County, Illinois. Chicago, The S. J. Clarke publishing Company, 1900.

Whiteside County, Ill.: clippings.

The genesis of Whiteside County. By Wm. D. Barge.

The history of Will County, Illinois. Chicago, W. LeBaron, jr., & Co., 1878.

The old settlers' seventh annual reunion. (Clippings from the Joliet republican and sun, September 9, 1887.)

Will County pioneer association. Annual reunion, 1886, Joliet.

Will County on the Pacific slopes, a historical sketch by George H. Woodruff. Joliet, Ill., The Joliet Republican and Sun, 1885.

The genesis of Will Co., Ill. By Wm. D. Barge.

The history of Will County, Illinois, containing a history of the county. History of the northwest. Chicago, Wm. LeBaron, jr., & Co., 1878.

Souvenir of settlement and progress of Will County, Ill. Chicago, Historical directory, 1884.

Fifteen years ago; or, The patriotism of Will

County. Printed and published for the author by James Goodspeed. Joliet, 1876.

Forty Years ago. A contribution to the early history of Joliet and Will County. Published by Jas. Goodspeed. Joliet Republican printing house, 1874.

Will County pioneer association annual reunion, 1886. Joliet.

The history of Williamson County, Illinois. From the earliest down to the present, by Milo Erwin. Marion, Ill., 1876.

The genesis of Williamson County. By William D. Barge.

Historical Encyclopedia of Illinois, edited by Newton Bateman, L.I.D., Paul Selby, A.M., and history of Winnebago County, edited by Charles A. Church. Chicago, Munsell pub. co., 1916.

The history of Winnebago County, Illinois, its past and present. Chicago, H. F. Kett & Co., 1877.

Rockford and Freeport general and business directories, and Winnebago and Stephenson Counties advertisers for 1857. Hall & McEvoy, 1857.

Past and Present of the city of Rockford and Winnebago County, Ill., by Chas. A. Church, assisted by H. H. Waldo. Chicago, The S. J. Clarke publishing Co., 1905.

The genesis of Winnebago County. By Wm. D. Barge.

History of Rockford and Winnebago County, Illinois, from the first settlement in 1834 to the civil war, by Chas. C. Church; Pub. by the New England Society of Rockford, Ill. Rockford, Ill., W. P. Lamb, printer, 1900.

Geography, history and civics of Woodford County, Illinois; ed. by Roy L. Moore. Pub. under the direction of the Woodford Teachers' Association (1913.)

History of Woodford County. By Roy L. Moore. Eureka, Ill., Woodford County republican, 1910.

Soldiers of the war of 1812, whose bounty and grants were located in Woodford County, Bloomington, Ill., 1913.

The genesis of Woodford County. By William D. Barge.

The past and present of Woodford County, Illinois. Chicago, Wm. LeBaron, jr., & Co., 1878.

PROGRAM INTER-STATE POST GRADUATE ASSEMBLY OF AMERICA

St. Paul, Minnesota

October 12, 13, 14, 15, and 16, 1925

General headquarters for all scientific sessions and exhibits: St. Paul Auditorium

Hotel headquarters: St. Paul Hotel.

FIRST DAY

Monday, October 12, 7 A. M.

1. Diagnostic Clinic (Medical). Diseases of the blood or heart cases. Dr. Charles S. Williamson, Professor of Medicine, University of Illinois College of Medicine, Chicago, Illinois.

2. Diagnostic Clinic (Surgical). Dr. William S. Baer, Associate Professor of Orthopedic Surgery,

Johns Hopkins University Medical Dept., Baltimore, Maryland.

3. Diagnostic Clinic (Oto-laryngology). Dr. Hanau W. Loeb, Dean and Professor of Ear, Nose and Throat Diseases, St. Louis University School of Medicine, St. Louis, Missouri.

Intermission

Review Exhibits

40. Diagnostic Clinic (Surgical). Dr. E. Starr Judd, Professor of Surgery, Minnesota Graduate School of Medicine, Rochester, Minnesota.

5. Diagnostic Clinic (Surgical). (a) Non-specific lung suppuration, such as bronchiectasis or bronchectatic abscess of the lung in combination with a patient suffering from pulmonary tuberculosis; (b) Cancer of the esophagus, breast, thromboangitis obliterans, cholecystitis with or without stones. Dr. Willy Meyer, Professor of Surgery, New York Post-Graduate School of Medicine, New York, N. Y.

Afternoon Session, 1 P. M.

6. Diagnostic Clinic (Medical). Arterial hypertension, Diseases of the heart and kidney. Dr. Ellsworth S. Smith, Professor of Clinical Medicine, Washington University School of Medicine, St. Louis, Missouri.

7. Diagnostic Clinic (Surgical). General surgical cases. Dr. Arthur M. Shipley, Professor of Surgery, University of Maryland, School of Medicine, Baltimore, Maryland.

8. Diagnostic Clinic (Surgical). Dr. George J. Heuer, Professor of Surgery, University of Cincinnati, College of Medicine, Cincinnati, Ohio.

9. Diagnostic Clinic (Medical). Dr. William J. Kerr, Associate Professor of Medicine, University of California, San Francisco, California.

10. "Chronic Infections of the Skull." Dr. Charles B. Lyman, Professor of Clinical Surgery, University of Colorado, School of Medicine, Denver, Colorado.

11. "The Management of the Ordinary Anemias." Dr. Charles S. Williamson, Professor of Medicine, University of Illinois College of Medicine, Chicago, Illinois.

Intermission

Review Exhibits

12. Subject later. Dr. William S. Baer, Associate Professor of Orthopedic Surgery, Johns Hopkins University Medical Dept., Baltimore, Maryland.

13. Subject later. Dr. C. J. MacGuire, Jr., New York, N. Y.

14. "The Anatomic Relation of the Optic Nerve to the Para-Nasal Sinuses." (Slides.) Dr. Hanau W. Loeb, Dean and Professor of Ear, Nose and Throat Diseases, St. Louis University School of Medicine, St. Louis, Missouri.

Evening Session, 7 P. M.

15. "Pernicious Anemia." Dr. Edward W. Montgomery, Professor of Medicine and Clinical Medicine, University of Manitoba Faculty of Medicine, Winnipeg, Canada.

16. "The Treatment of Cicatricial Contractures of

the Neck." Dr. Charles N. Dowd, Professor of Clinical Surgery, Columbia University School of Medicine, New York, N. Y.

17. "The Diagnosis and Treatment of Heart Disease." Dr. William J. Kerr, Associate Professor of Medicine, University of California, San Francisco, California.

18. Subject later. Dr. E. Starr Judd, Professor of Surgery, Minnesota Graduate School of Medicine, Rochester, Minnesota.

Intermission

Review Exhibits

19. "Examination of Para-Nasal Sinuses with clinical demonstrations and radiographs." Dr. Cornelius G. Coakley, Professor of Laryngology and Otology, Columbia University School of Medicine, New York, N. Y.

20. "Newer Methods of Preliminary Medication and General Anesthesia." (Slides.) Dr. James T. Gwathmey, New York, N. Y.

21. "The Preparation and Use of Thick Skin Grafts." (Slides.) Dr. Harry P. Ritchie, Associate Professor of Surgery, University of Minnesota Graduate School of Medicine, St. Paul, Minnesota.

SECOND DAY

Tuesday, October 13, 7 A. M.

1. Diagnostic Clinic (Laryngology). Dr. Cornelius G. Coakley, Professor of Laryngology and Otology, Columbia University School of Medicine, New York, N. Y.

2. Diagnostic Clinic (Surgical). Neck cases, especially T. B., bronchial cysts of fistulae thyroglossal cysts, or fistulae hygromas. Dr. Charles N. Dowd, Professor of Clinical Surgery, Columbia University School of Medicine, New York, N. Y.

3. Diagnostic Clinic (Medical). Bone, cardio-vascular, blood or gastro-intestinal cases. Dr. Joseph Sailer, Professor of Clinical Medicine, University of Pennsylvania, School of Medicine, Philadelphia, Pennsylvania.

Intermission

Review Exhibits

4. Diagnostic Clinic (Surgical). Cranial and general surgical cases. Dr. Samuel Clark Harvey, Associate Professor of Surgery, Yale University School of Medicine, New Haven, Conn.

5. Diagnostic Clinic (Surgical). Upper abdominal cases. Dr. John B. Deaver, Professor of Surgery, University of Pennsylvania School of Medicine, Philadelphia, Pa.

Afternoon Session, 1 P. M.

6. Diagnostic Clinic (Diabetic). Dr. Rollin T. Woodyatt, Clinical Professor of Medicine, Rush Medical College, Chicago, Illinois.

7. Diagnostic Clinic (Surgical). Surgery of the face and various parts of the body. Dr. Allen B. Kanavel, Professor of Surgery, Northwestern University School of Medicine, Chicago, Illinois.

8. Diagnostic Clinic (Medical). Heart and lung cases. Dr. Edward J. Beardsley, Associate Professor

of Medicine, Jefferson Medical College, Philadelphia, Pa.

9. "The Role of Operative Surgery in the Treatment of Pulmonary Tuberculosis." (Slides.) Dr. Willy Meyer, Professor of Surgery, New York Post-Graduate School of Medicine, New York, N. Y.

Intermission

Review Exhibits

10. "Hypertension." Dr. James H. Means, Professor of Clinical Medicine, Harvard University School of Medicine, Boston, Mass.

11. "Observations on the Gall Bladder." Dr. Frank Boland, Professor of Surgery, Emory University School of Medicine, Atlanta, Georgia.

12. "Thoracic Suppurations." Dr. Arthur M. Shipley, Professor of Surgery, University of Maryland, School of Medicine, Baltimore, Maryland.

13. "Pyloric Stenosis." Dr. E. E. Francis, Professor of Surgery, University of Tennessee, School of Medicine, Memphis, Tennessee.

Evening Session, 7 P. M.

14. "The Treatment of Cardiac Syphilis." Dr. Harlow Brooks, Professor of Clinical Medicine, University and Bellevue Hospital Medical College, New York, N. Y.

15. "Plastic Surgery." Dr. Allen B. Kanavel, Professor of Surgery, Northwestern University School of Medicine, Chicago, Illinois.

16. "Heliotherapy as an Adjunct in the Treatment of Chronic Surgical Conditions." Dr. George J. Heuer, Professor of Surgery, University of Cincinnati College of Medicine, Cincinnati, Ohio.

17. "Further Studies Concerning the Injurious Effects of Arterial Hypertension on the Cardio-Vascular Renal Apparatus." Dr. Elsworth S. Smith, Professor of Clinical Medicine, Washington University School of Medicine, St. Louis, Missouri.

Intermission

Review Exhibits

18. "The Relation of the Human Constitution to Disease." Dr. George Draper, New York, N. Y.

19. Subject later. Dr. Milton J. Rosenau, Professor of Preventive Medicine and Hygiene, Brookline, Boston, Mass.

20. "Drainage as a Factor in Renal Disease." (Slides.) Dr. Guy L. Hunner, Associate Professor of Gynecology, Johns Hopkins University School of Medicine, Baltimore, Maryland.

THIRD DAY

Wednesday, October 14, 7 A. M.

1. Diagnostic Clinic (Medical). Cases of cardiac syphilis, cardiac decompensation, lung tumor or abscess, acute rheumatic fever, angina pectoris, chronic nephritis. Dr. Harlow Brooks, Professor of Clinical Medicine, University and Bellevue Hospital Medical College, New York, N. Y.

2. Diagnostic Clinic (Gynecology). Dr. Guy L. Hunner, Associate Professor of Gynecology, Johns Hopkins University School of Medicine, Baltimore, Maryland.

3. Diagnostic Clinic (Psychiatry). Dr. Thomas W. Salmon, Professor of Psychiatry, Columbia University School of Medicine, New York, N. Y.

Intermission

Review Exhibits

4. Diagnostic Clinic (Medical). Hypertensive diseases. Dr. James H. Means, Professor of Clinical Medicine, Harvard University School of Medicine, Boston, Mass.

5. Diagnostic Clinic (Surgical). Cases of rheumatism or rheumatoid arthritis. Dr. Charles H. Mayo, Mayo Clinic, Rochester, Minnesota.

Afternoon Session, 1 P. M.

6. Pathological Conference supervised by Dr. H. E. Robertson, Professor of Pathology, University of Minnesota (Mayo Foundation), Rochester, Minnesota.

7. Diagnostic Clinic (Medical). Cardio-Vascular diseases or diseases of the blood. Dr. Maurice C. Pincoffs, Professor of Medicine, University of Maryland School of Medicine, Baltimore, Maryland.

8. "Familiar Problems in Gynecology." Dr. William P. Graves, Professor of Gynecology, Harvard University School of Medicine, Boston, Mass.

9. "Diphtheria and Its After Effects." Dr. H. B. Cushing, Clinical Professor of Pediatrics, McGill University Faculty of Medicine, Montreal, Canada.

Intermission

Review Exhibits

10. "Duodenal Ulcer versus Cholecystitis." Dr. John B. Deaver, Professor of Surgery, University of Pennsylvania School of Medicine, Philadelphia, Pa.

11. "Some Recent Revelations of the Denervated Heart." Dr. Walter B. Cannon, Professor of Physiology, Harvard University School of Medicine, Boston, Mass.

12. "The Significance of Arterial Hypertension." Dr. Wilder Tileston, Clinical Professor of Medicine, Yale University School of Medicine, New Haven, Conn.

13. "Carcinoma of the Rectum." Dr. Alfred T. Bazin, Professor of Surgery, McGill University Faculty of Medicine, Montreal, Canada.

Evening Session, 7 P. M.

14. "The Diagnosis of Abdominal Tumors." (Slides.) Dr. Joseph Sailer, Professor of Clinical Medicine, University of Pennsylvania School of Medicine, Philadelphia, Pa.

15. "The Liver and Its Function in Relation to Its Surgical Diseases." Dr. Samuel Clark Harvey, Associate Professor of Surgery, Yale University School of Medicine, New Haven, Conn.

16. "Renal and Ureteral Stones." Dr. Edward L. Keyes, Professor of Clinical Surgery, Department of Urology, Cornell University School of Medicine, New York, N. Y.

17. "Post-Graduate Instruction in Our Own Offices." Dr. Edward J. Beardsley, Associate Professor of Medicine, Jefferson Medical College, Philadelphia, Pa.

Intermission
Review Exhibits

18. "Osteotomy of the Os Calcis for Extreme Cases of Flat Feet." (Slides.) Dr. John P. Lord, Professor of Orthopedic Surgery, University of Nebraska School of Medicine, Omaha, Nebr.

19. "Treatment and Prognosis in Pericarditis." Dr. Maurice C. Pincoffs, Professor of Medicine, University of Maryland School of Medicine, Baltimore, Maryland.

20. "Modern Medical Education—Progress or Retrogressive." Dr. Eugene E. Murphey, Professor of Medicine, University of Georgia School of Medicine, Augusta, Georgia.

FOURTH DAY

Thursday, October 15, 7 A. M.

1. Diagnostic Clinic (Surgical). Renal and ureteral stone cases. Dr. Edward L. Keyes, Professor of Clinical Surgery, Department of Urology, Cornell University School of Medicine, New York, N. Y.

2. Diagnostic Clinic (Pediatric). Rheumatic fever and after effects in children of school age. Dr. H. B. Cushing, Clinical Professor of Pediatrics, McGill University Faculty of Medicine, Montreal, Canada.

3. Diagnostic Clinic (Surgical). Acute abdominal lesion cases. Dr. Alfred T. Bazin, Professor of Surgery, McGill University Faculty of Medicine, Montreal, Canada.

Intermission
Review Exhibits

4. Diagnostic Clinic (Surgical). Dr. Arthur Dean Bevan, Professor of Surgery, Rush Medical College, Chicago, Illinois.

5. "The Five Most Important Obstetrical Mistakes." Dr. Joseph B. DeLee, Professor of Obstetrics, Northwestern University School of Medicine, Chicago, Illinois.

Afternoon Session, 1 P. M.

6. Diagnostic Clinic (Medical). Abdominal diseases, especially liver. Dr. Wilder Tileston, Clinical Professor of Medicine, Yale University School of Medicine, New Haven, Conn.

7. Diagnostic Clinic (Surgical). Management of cases of prostatic obstructions. Dr. Hugh Cabot, Professor of Surgery, University of Michigan School of Medicine, Ann Arbor, Michigan.

8. "Pneumococcus Peritonitis." Dr. Charles L. Gibson, Professor of Surgery, Cornell University School of Medicine, New York, N. Y.

9. "Focal Infection." Dr. Charles H. Mayo, Mayo Clinic Rochester, Minnesota.

Intermission
Review Exhibits

10. "The Aetiology of Anaemia and Its Importance in Diagnosis and Treatment." Dr. Duncan A. L. Graham, Professor of Medicine, University of Toronto, Faculty of Medicine, Toronto, Canada.

11. "A Re-study of Operations for Radical Cure of Hernia, including Inguinal, Femoral, Umbilical, Post-operative hernias associated with undescended Testis

and Diaphragmatic Hernia." Dr. Arthur Dean Bevan, Professor of Surgery, Rush Medical College, Chicago, Illinois.

12. Subject later. Mr. Philip Franklin, F. R. C. S., London, England.

13. Subject later. Dr. Thomas W. Salmon, Professor of Psychiatry, Columbia University School of Medicine, New York, N. Y.

Evening Session, 7 P. M.

14. "The Relative Roles of Surgery and of Radiation in the Treatment of Tumors of the Breast." (a) Dr. F. E. Bunts, Professor Principles of Surgery and Clinical Surgery, Western Reserve University School of Medicine, Cleveland, Ohio. (b) Dr. U. V. Portmann, Cleveland Clinic, Cleveland, Ohio.

15. "Joint Ankylosis—Surgical Measures for Its Prevention and Relief." Dr. Nathaniel Allison, Professor of Orthopedic Surgery, Harvard University School of Medicine, Boston, Mass.

16. "The Physiology of the Female Pelvic Floor." Dr. Ernest F. Tucker, Professor of Gynecology, University of Oregon School of Medicine, Portland, Oregon.

17. "Syphilis and Its Relation to Eye Diseases." Dr. William H. Wilder, Professor of Ophthalmology, Rush Medical College, Chicago, Illinois.

Intermission
Review Exhibits

18. "Diagnosis of Diseases of the Rectum." Dr. L. J. Austin, Professor of Surgery, Queen's University Faculty of Medicine, Kingston, Canada.

19. Subject later. Dr. James E. Thompson, Professor of Surgery, University of Texas School of Medicine, Galveston, Texas.

20. Subject later. Dr. Arthur A. Law, Associate Professor of Surgery, University of Minnesota Graduate School of Medicine, Minneapolis, Minn.

FIFTH DAY

Friday, October 16, 7 A. M.

1. Diagnostic Clinic (Surgical). Abdominal and gastro-intestinal cases. Dr. Charles L. Gibson, Professor of Surgery, Cornell University School of Medicine, New York, N. Y.

2. Diagnostic Clinic (Surgical). Joint involvement, particularly cases of suspected tuberculosis of either the knee, hip or other joints. Dr. Nathaniel Allison, Professor of Orthopedic Surgery, Harvard University School of Medicine, Boston, Mass.

3. Diagnostic Clinic (Medical). Cases of cardiac lesions or signs of interference with cardiac function. Dr. J. C. Meakins, Professor of Medicine and Director of the Department, McGill University Faculty of Medicine, Montreal, Canada.

Intermission
Review Exhibits

4. Diagnostic Clinic (Surgical). Dr. George W. Crile, Professor of Surgery, Western Reserve University School of Medicine, Cleveland, Ohio.

5. Diagnostic Clinic (Medical). Case of anaemia and mediastinal tumor. Dr. Duncan A. L. Graham,

Professor of Medicine, University of Toronto Faculty of Medicine, Toronto, Canada.

Afternoon Session, 1 P. M.

6. Diagnostic Clinic (Surgical). Cases of anaemia. Dr. William J. Mayo, Mayo Clinic, Rochester, Minnesota.

7. Diagnostic Clinic (Surgical). Sir William Arbuthnot Lane, Bt., London, England.

8. Pathological Conference supervised by Dr. H. E. Robertson, Professor of Pathology, University of Minnesota (Mayo Foundation), Rochester, Minnesota.

9. "Circulatory Failure in Heart Disease." Dr. J. C. Meakins, Professor of Medicine and Director of the Department, McGill University Faculty of Medicine, Montreal, Canada.

Intermission

10. "The Cause and Prevention of So-called Catheter Cystitis and Retention of the Urine." Dr. Hugh Cabot, Professor of Surgery, University of Michigan School of Medicine, Ann Arbor, Michigan.

11. "The Treatment of Gastric Ulcer." (a) "Indications for and the Technique of Dissection of the Stomach for Ulcer." Dr. George W. Crile, Professor of Surgery, Western Reserve University School of Medicine, Cleveland, Ohio. (b) "The Medical Treatment of Peptic Ulcer." Dr. John Phillips, Assistant Professor of Therapeutics, Western Reserve University School of Medicine, Cleveland, Ohio. (c) "The Patient versus His Lesion." Dr. George W. Crile, Cleveland, Ohio.

12. "The Association of Lesions of the Bone Marrow, the Liver and the Spleen in Certain Blood Dyscrasias." Dr. William J. Mayo, Mayo Clinic, Rochester, Minnesota.

FOREIGN GUESTS

Sir William Arbuthnot Lane, London, England.

Mr. William Blair Bell, F. R. C. S., Professor of Obstetrics and Gynecology, University of Liverpool Medical Department, Liverpool, England.

Professor Vittorio Putti, Bologna, Italy.

Mr. Philip Franklin, F. R. C. S., London, England.

Dr. H. L. McKisack, Consulting Physician, Royal Victoria Hospital, Belfast, Ireland.

Dr. W. H. Parkes, C. M. G., C. B. E., Auckland, New Zealand.

BANQUET

Addresses by distinguished citizens from America and foreign countries.

ILLINOIS STATE MEDICAL SOCIETY

FINAL BULLETIN PUBLISHED BY THE LEGISLATIVE COMMITTEE

Springfield, Illinois, August 1, 1925

A survey since the adjournment of the Illinois General Assembly, several weeks ago, demonstrates that the Illinois State Medical Society was very successful in its legislative program.

The Council did not offer any bills to be intro-

duced and your Legislative Committee was placed upon the defensive throughout the entire session.

The hardest fought battle was the Chiropractors, who were exceptionally well organized and had the active support of the Speaker of the House as well as the Republican Floor Leader, who is next to the Speaker in power, and in addition the active championship of Lee O'Neill Browne, a forceful orator and one of the most influential members of the House. Around these important members as a nucleus they built their hopes for success. The Illinois State Medical Society, through hard and efficient work, succeeded in showing the fallacy of such laws and the Chiropractors were hopelessly defeated.

Through the alleged and incorrect charges against the Chicago Health Department the League for Medical Freedom succeeded in getting a bill passed by both the House and Senate, which was designed to prevent Health Authorities from entering the home of a person suffering with a contagious disease without first getting a court order. The bill was so loosely drawn and obviously so dangerous in its functions, if it became a law, that your Committee did not believe that it was possible, even though the bill was passed by the House and Senate, for the Governor to allow such an important situation to become a law. While the bill was entirely one that concerned the administration of the Health Department, nevertheless one of the members of your Legislative Committee appeared, with the Commissioner of Public Health and several others, before the Governor and after the matter was thoroughly explained to him he promptly vetoed the bill.

This was the only test during the entire session which demonstrated that the Governor has kept faith with the Illinois State Medical Society and that he opposed all vicious laws regarding the public health and favored the recommendations of the Illinois State Medical Society.

No other matters affecting the medical profession were permitted to pass either the House or the Senate.

Your Committee is deeply grateful to the Council for its advice and help and to those County Societies who maintained active Legislative Committees and especially to the Chicago Medical Society for the excellent Legislative organization, which worked perfectly throughout the entire session. The Chicago councillors had a tremendous task in perfecting the organization and there were but very few Cook County legislators that were not seen by an active committee of physicians in their particular districts. Without the aid of Cook County in the Chiropractic fight the bill would, undoubtedly, have passed the House.

Your Committee is appreciative of the cooperation in practically every senatorial district which made it possible to conduct the entire program without asking a single physician to take his time and the necessary expense to come to Springfield during the session for lobbying purposes. All factions which we

were forced to oppose maintained large and constant lobbies in Springfield.

The following bills of interest to the Illinois State Medical Society were:

- H. B. 6—Provides for an Old Age Pension Fund..Defeated
 H. B. 58—Relating to schools for crippled children...Passed
 H. B. 90—The eight hour law.....Defeated
 (Also vigorously opposed by the Illinois Hospital Association.)
 H. B. 136—Appointment of County Veterinarian by County BoardsDefeated
 H. B. 153—Amends the present Mother's Pension Act, changing age of child from 14 to 16.....Passed
 H. B. 169—Enables cities to establish Tuberculosis SanitariumsPassed
 H. B. 176—Power given to Municipalities to prohibit the sale of milk from infected cattle.....Passed
 H. B. 182—Appropriating \$1,041,287 to the Department of Public HealthPassed
 H. B. 231—Providing for the asexualization of inmates of State InstitutionsDefeated
 H. B. 263—Re the avocation of cook or chef.....Defeated
 H. B. 267—Provides for better education of the blind...Passed
 H. B. 318—Re Old Age Pensions.....Defeated
 H. B. 352—The Chiropractic Bill.....Defeated
 H. B. 353—Legalizing the practice of Beauty Culture. (The objections to this bill made by your Legislative Committee were sustained and the law is innocuous from a medical standpoint).....Passed
 H. B. 377—Creating a Chiropractic Board.....Defeated
 H. B. 378—An enabling act for No. 355.....Passed
 H. B. 507—Regulating community nurses.....Passed
 H. B. 554—A good milk pasteurization bill.....Passed
 H. B. 581—An Act to regulate Naprapathy.....Defeated
 H. B. 622—An 8½ hour law bill (Substituted for H. B. 90).....Defeated
 H. B. 640—An Act to standardize clinical thermometers, which would have increased the cost.....Defeated
 S. B. 11—Amending child labor law.....Defeated
 S. B. 12—Increasing taxes for Municipal Sanitarium.....Defeated
 S. B. 44—For a Board of Natureopaths.....Defeated
 S. B. 58—Amends City and Village Act to appoint Boards of HealthDefeated
 S. B. 87—Establishes a State Insurance Fund.....Defeated
 (Note)—State medicine could easily follow in paths of this sort.
 S. B. 115—Provides for the treatment of delinquent childrenPassed
 S. B. 116—Provides County Health Superintendents.....Defeated
 S. B. 120—Prohibits tubercular test for dairy animals.....Defeated
 S. B. 134—Amends pension bill.....Defeated
 S. B. 147—Increases tax bill for tubercular Sanitariums.....Defeated
 S. B. 251—Re physical training in public schools.....Defeated
 S. B. 257—Appropriating two million dollars to indemnify owners of tubercular cattle destroyed by the StatePassed
 S. B. 264—Child Labor Bill.....Defeated
 S. B. 284—Creating Osteopathic Board.....Defeated
 S. B. 285—Permitting Osteopaths to do Obstetrics.....Defeated
 S. B. 286—An Osteopathic bill seeking right to do surgeryDefeated
 S. B. 287—Exempting Osteopaths from the Optometry ActDefeated
 S. B. 288—Another Osteopathic Measure.....Defeated
 S. B. 304—Altering authority of Health Officials.....Vetoed
 S. B. 336—A Naprapathic bill.....Defeated
 S. B. 377—A Pharmacy bill.....Passed
 S. B. 384—Community Nurses bill.....Defeated
 S. B. 387—Regulating the practice of Chiropody.....Defeated
 S. P. 414—Revising establishment of Public Hospitals.....Defeated
 S. B. 453—A Masseuse bill.....Defeated
 S. B. 475—A Municipal venereal bill.....Defeated
 S. B. 486—Creating a Board of Examiners for MasseursDefeated
 S. B. 505—Another Masseuse bill.....Defeated
 S. B. 526—To establish board of health.....Defeated

Anyone interested in the above measures may obtain copies by writing to the Chairman of the Committee at Springfield.

C. E. Humiston, M. D., Chicago, Ill.

Edward Bowe, M. D., Springfield, Ill.

J. R. Neal, M. D., Springfield, Ill.

Legislative Committee.

NEW COMMANDMENTS FOR THE DOCTOR

I. Thou shalt have no favorites in newspaper correspondents in order to see thy name in print.

II. Thou shalt not bow down to graft nor to the image of gold.

III. Thou shalt hold thy tongue when sued for malpractice; remembering silence is golden and that thy adversary is after thy gold and will get it if thou art not discreet.

IV. Remember the Sabbath day and keep it holy; six days shalt thou labor and the seventh also, if thou hast an opportunity to do good or the prospect of a good fee.

V. Honor thy fathers of thy profession, that thy days may be long upon the land and thy usefulness lengthened, through the example and achievements of thy fathers.

VI. Thou shalt not sanction adultery nor produce an abortion.

VII. Thou shalt not steal thy brother's patients nor forgive him when he steals thine.

VIII. Thou shalt not kill thy brother's opportunity for earning a living nor murder his chance of usefulness. He, probably, is thy superior.

IX. Thou shalt not bear false witness against thy neighbor, nor speak evil of his good name. His reputation may be better than thine.

X. Thou shalt not covet the specialist's fee, nor dispute even a division. Let him have all the money; he may think he earned it. Thou must be content with glory.

Dr. W. W. Brown.

Shenandoah Junction, W. Va.

THE ROMANCE OF MEDICINE

William D. Haggard, Nashville, Tenn., (*Journal A. M. A.*, May 30, 1925), reviews the progress made in medicine in the last fifty years. He says that medicine is the only profession that is literally and altruistically devoted to professional suicide. It endeavors chiefly, not alone to cure, but to prevent disease, and thus to banish from mankind—pain, suffering and ultimate death from maladies of the flesh. But what it cannot prevent it must cure. What it cannot cure it must palliate. The discovery of the germ of tuberculosis, "the Captain of the men of Death," was the beginning of the annihilation of the Great White Plague and is a more important victory for mankind than resulted from the Fifteen Decisive Battles of the World. That the spirochete was the actual cause of syphilis, the great Black Plague, was discovered by Schaudinn in 1905. A romance in medicine to grip the admiration of the world is the subjugation of typhoid fever. Most dramatic among modern victories is the conquest of yellow fever. In the last decade, many diseases of the heart, kidneys, gall-bladder and other organs have been shown to be derived frequently from the foci of infection around the teeth, in the tonsils, in the sinuses of the nose, and in other structures. This great discovery has enabled the physician to administer in many cases the most effective of all treatments, the removal of the cause. The discovery of radium by Madam Curie close on the discovery of the roentgen ray by Roentgen in 1896 was not only a triumph in wresting another secret from the physical world, but has furnished a most necromantic weapon for the cure of

certain forms of cancer and for its palliation in hopelessly neglected cases. The use of safe drugs for local injection in rendering surgical operations painless is now like a performance in a world of magic. Antitetanic serum to prevent lockjaw is the king of preventive serums. Physicians and the whole world are daily debtors to the innumerable instruments of precision, to the blood pressure apparatus, the basal metabolism rate machines, and the newer instruments for administering gases, that render anesthesia almost totally devoid of danger. What is more astounding than the revelation in the last few decades of the part played in our bodies and lives by the wonder-working ductless glands? The greatest romance of the last few years in medicine was the discovery of insulin by Banting. The solution of the pellagra problem seems nearer with the increasing belief that pellagra is a deficiency disease, possibly from a shortage of vitamins, and seems to be caused by faulty protein food mixture and is generally benefited by fresh meat and milk. The most threatening cloud of chronic disease in the South, hookworm, has been dissolved by the wand of Aesculapius. The real romance of present-day medicine is to prevent or to discover early the degenerative conditions of the great organs, the heart, kidneys, liver and brain. All the saving in life has been in the prevention of infant mortality in the control of contagious diseases. Eternal vigilance of every individual by his physician is the price of lengthened life in the middle aged. Community health is much in advance of the prevention of illness in the individual. *Have a thorough physical examination on your birthday!* It should be a real survey of a man's physical as well as mental status. It is estimated that the number of cases of sickness in this country in a year is thirteen and a half million, costing the nation a billion dollars. It is astounding to think that there are 225 million days of sickness a year in the United States. If it were possible, by nation-wide effort, to reduce the amount of sickness by 25 per cent, the total economic gain yearly would be around a quarter of a billion dollars. The people should be taught that in truth there can no more be different "schools" of medicine than there can be different schools of physics, or of mathematics or astronomy. There is nothing under the sun which is of proved value that has not and will not be used by the profession in the treatment of disease. All nonmedical agencies are enthusiastic endorsers of health examinations. A health week should be established nationally by all the health agencies of this country, with the co-operation of every one of the 90,000 members of the American Medical Association. The press can be counted on to do its part, which is an essential as it is unflinching and helpful in all health movements. A manual for the examination is being prepared by the American Medical Association. Examination blanks can be obtained from the headquarters making for completeness and uniformity. The stupendous advance in medical education in the last fifteen years reads like a romance. The supply of an adequate number of sane, resourceful, dependable

physicians should have the solicitude of the profession as a whole, as well as of the medical educators. The laboratory side also should not be overcultivated. Fundamentals should be stressed, but recondite experimental work omitted in the undergraduate course. In this desirable correlation between the pure sciences and the clinical subjects, the student of anatomy and pathology should be brought in his first two years into contact with the patient, so that he will appreciate the relationship of his studies to the problems of disease. Regarding clinical work in England, the Council on Medical Curriculum has advocated the continuation in the clinic itself of anatomy, physiology, pathology and chemistry, as these apply to the problems of medicine and surgery there presented. The question of entering the student into practice at an earlier age is important. It is impossible to devote to preliminary preparation less than two years of college work in biology, physics and chemistry, and it is impossible to eliminate anything from the four year medical course. The hospital year is essential. The only chance to curtail the length of time would be by saving one or two years in the high school. This can be done by the four quarter school year and no compulsory vacation at an unchangeable time, thus saving one or two years for the student with medicine as his goal. One of the greatest romances in the art of medicine has been the amazing growth and perfection of the specialties. One of the drawbacks of specialization is that it loses for the physician the personal touch and close contact with the family and with the acutely ill. The general practitioner must retake his former position of importance.

SUICIDE AND AGE

Suicide, in the wage-earning group of the American and Canadian populations is approximately two and one-half times as frequent among men as among women. This is shown by what has happened among the more than 16,000,000 Industrial policyholders of the Metropolitan Life Insurance Company.

The above ratio, however, relates to all ages combined. When the suicide data are studied by age periods, it is shown that the ratio of deaths of males to those of females varies greatly at different periods of life, and that the preponderance of self-murder among males increases perceptibly with advancing age.

Suicide does not assume much numerical importance until age 20 is reached. Between 20 and 24, the death rate for males approximates one and a half times that for females. Between ages 25 and 34, the ratio is a little more than two to one; during each of the next 10-year periods, it is about four to one; at 55 to 64 years, it approximates five to one; and after age 65, there are about seven times as many suicides among men as among women.

One age period, namely, 15 to 19 years, stands out in bold relief from all the rest. This is the only time of life in which suicide is more common among females. In 1923, the suicide rate of young women of these ages insured in the Metropolitan's Industrial

Department, was 4.1 per 100,000—or nearly two and one-half times that for males (1.7). More than half of the young women who suicided at these ages used solid or liquid poisons, and about one-quarter died by inhalation of poisonous gas.

At every age period of life up to 45 years, in fact, women suicides used solid or liquid poisons more than any other method; poisonous gases ranked next. Beginning with age 45, however, and up to age 65, inhalation of gas was the means most used. Among males, on the other hand, shooting is the method most generally employed, and this seems to hold for all of the age periods up to age 65.

The above data relates to white policyholders only. —*Statistical Bulletin Metropolitan Life Insurance Co.*

DOCTOR SUED BECAUSE THE PATIENT DIED

AS TO LAWSUITS AGAINST DOCTORS

One of the best known surgeons of this State has just had to defend himself against a \$250,000 damage suit because a patient died. Fellow practitioners were compelled by the court to testify, despite their appeal to "professional ethics." But the outcome was, as might have been expected, a verdict for the defense. Such cases are too frequent. The expert who has the highest respect for his Hippocratic oath may easily be hampered in his work for the saving of life, or the lessening of suffering, if he has in the back of his head the fear of an action at law because he has done something unconventional.

It is with a view to meeting this situation that the Supreme Court of New Jersey, sitting at Trenton, has sustained the throwing out of court of a suit brought against a Plainfield physician by a hospital patient who had lost his arm because of an infection. The principles laid down by the court in its opinion are absolutely logical.

Barring a guarantee of a cure, a physician is not blamable or suable because his ministrations have been unavailing. "The skill and care that a physician is required to give his patient is that ordinarily possessed and exercised by others in the profession."

Positive proof of concrete and definite negligence can alone justify an action for damages.

It may be true that the patient can almost never supply such proof, even where there has been negligence. That is his misfortune. On the whole it is better for everybody that the physician should be protected, and that is a proper ground for a judicial decision such as has just been rendered at Trenton.—*The Brooklyn Eagle*, June 18, 1925.

HARRISON LAW MUST BE ADMINISTERED ALONG COMMON SENSE LINES

HARRISON NARCOTIC LAW AND THE PRACTICE OF MEDICINE

(*Linder v. United States (U. S.), 45 Sup. Ct. Rep. 446*)

The Supreme Court of the United States, in reversing a judgment which affirmed a conviction of defendant Linder of violating the Harrison Narcotic Law

and in remanding the cause for further proceedings, says that, in effect, the indictment alleged that the accused, a duly registered physician, violated the statute by giving to a known addict four tablets containing morphin and cocain with the expectation that she would administer them to herself in divided doses, while unrestrained and beyond his presence or control, for the sole purpose of relieving conditions incident to addiction and keeping herself comfortable. The indictment did not question the physician's good faith, nor the wisdom or propriety of his action according to medical standards. It did not allege that he dispensed the drugs otherwise than to a patient in the course of his professional practice or for other than medical purposes. The facts disclosed indicated no conscious design to violate the law, no cause to suspect that recipient intended to sell or otherwise dispose of the drugs, and no real probability that she would not consume them.

The declared object of the narcotic law is to provide revenue, and this court has held that whatever additional moral end it may have in view must "be reached only through a revenue measure and within the limits of a revenue measure." Congress cannot, under the pretext of executing delegated power, pass laws for the accomplishment of objects not entrusted to the federal government. Obviously, direct control of medical practice in the state is beyond the power of the federal government. Incidental regulation of such practice by Congress through a taxing act can not extend to matters plainly inappropriate and unnecessary to reasonable enforcement of a revenue measure. The enactment under consideration levies a tax, upheld by this court, on every person who imports, manufactures, produces, compounds, sells, deals in, dispenses or gives away opium or coca leaves or derivatives therefrom, and may regulate medical practice in the states only so far as reasonably appropriate for or merely incidental to its enforcement. It says nothing of "addicts" and does not undertake to prescribe methods for their medical treatment. They are diseased and proper subjects for such treatment, and this court can not possibly conclude that a physician acted improperly or unwisely or for other than medical purposes solely because he has dispensed to one of them in the ordinary course, and in good faith, four small tablets of morphin or cocain for relief of conditions incident to addiction. What constitutes bona fide medical practice must be determined on consideration of evidence and attending circumstances. Mere pretense of such practice, of course, cannot legalize forbidden sales, or otherwise nullify valid provisions of the statute, or defeat such regulations as may be fairly appropriate to its enforcement within the proper limitations of a revenue measure.

The opinion in *United States v. Behrman*, 257 U. S. 280, 287, 42 S. Ct. 303, can not be accepted as authority for holding that a physician, who acts bona fide and according to fair medical standards, may never give an addict moderate amounts of drugs for self-administration in order to relieve conditions incident to addiction. Enforcement of the tax demands no such

drastic rule, and if the act had such scope it would certainly encounter grave constitutional difficulties.

The narcotic law is essentially a revenue measure, and its provisions must be reasonably applied with the primary view of enforcing the special tax. This court finds no facts alleged in the indictment sufficient to show that the accused had done anything falling within definite inhibitions or sufficient materially to imperil orderly collection of revenue from sales. Federal power is delegated, and its prescribed limits must not be transcended even though the end seems desirable. The unfortunate condition of the recipient certainly created no reasonable probability that she would sell or otherwise dispose of the few tablets entrusted to her; and this court can not say that by so dispensing them the physician necessarily transcended the limits of that professional conduct with which Congress never intended to interfere.—*J. A. M. A.*

Book Reviews

THE MEDICAL SCIENCES IN THE GERMAN UNIVERSITIES.

A STUDY IN THE HISTORY OF CIVILIZATION, TRANSLATED FROM THE GERMAN OF THEODORE BILLROTH WITH AN INTRODUCTION BY WILLIAM H. WELCH. New York. The MacMillan Company, 1924.

This book on medical education published nearly fifty years ago now appears for the first time in English translation. This is a work of enduring value characterized by a breadth of view and the enunciation of certain general principles as sound and needful of utterance today as when they were first expressed; a book, moreover, singularly suggestive and stimulating in its discussion of many fundamental as well as detail problems of medical education, which are still of vital interest, especially in this country at the present stage of development of our medical schools.

THE SURGICAL CLINICS OF NORTH AMERICA. Issued serially, one number every other month.) Volume IV, Number V (Portland-Seattle Number, October, 1924), 263 pages with 112 illustrations. Per clinic year (February, 1924, to December, 1924). Paper, \$12.00; cloth, \$16.00 net. Philadelphia and London. W. B. Saunders Company.

The contributors to this volume are Doctors James B. Eagleson, J. Earl Else, W. B. Holden, Geo. M. Horton, Everett O. Jones, Thomas M. Joyce, Otis Floyd Lamson, J. Tate Mason, K. P. Moran, A. H. Peacock, A. E. Rokey, C. W. Sharples and George W. Swift.

A MANUAL OF PHYSICAL DIAGNOSIS. By Aurin Flint, M. D. Ninth Edition. Revised by Henry C. Thacher, M. D. Illustrated. Philadelphia and New York: Lea & Febiger. 1925. Price, \$3.25.

This manual is intended for the student at the beginning of his study of physical diagnosis and will continue to ingratiate itself into the daily routine of work

of the doctor after he engages in the practice of medicine. The present day trend is for young men to rely more and more upon the X-Ray and other modern mechanical methods for diagnosis. In this respect the work fills a long felt want.

MODERN SURGERY, General and Operative, by Chalmers Da Costa, M. D., LL.D., F. A. C. S. Samuel D. Gross, Professor of Surgery, Jefferson Medical College, Philadelphia, Ninth Edition, Revised and Reset. Octavo of 1527 pages with 1200 illustrations, some in colors. Philadelphia and London: W. B. Saunders Company, 1925, cloth, \$10.00 net.

This work has run through nine editions in rapid succession. This is sufficient recommendation. In this edition much new material appears, thus bringing the work up to date.

THE MEDICAL CLINICS OF NORTH AMERICA. (Issued serially.) one number every other month. Volume VIII, Number VI (Boston Number, May, 1925). Octavo of 278 pages and 47 illustrations and complete index to volume VI. Per clinic year (July, 1924, to May, 1925). Paper, \$12.00; cloth, \$16.00. Philadelphia and London: W. B. Saunders Company.

The contributors to this number are Doctors Davidson, Emery, Isaacs, Joslin, Kiefer, Lawrence, Lee, Levine, Locke, McClure, Morse, Nissen, O'Hara, Pratt, cilla White.

MODERN MARRIAGE. A handbook by Paul Popenoe. New York. The Macmillan Company. 1925. Price, \$2.50.

INFECTIONS OF THE HAND. A guide to the surgical treatment of acute and chronic suppurative processes in the fingers, hand, and forearm. By Allen B. Kanavel, M. D. Fifth edition, thoroughly revised. Illustrated with one hundred and ninety-six engravings. Philadelphia and New York. Lea & Febiger. 1925. Price, \$5.50.

In this work the author has striven to bring the subject of infection up to date and the author lays special stress on the incident of instituting early drainage and the necessity of attempting to preserve the function of the hands.

1924 COLLECTED PAPERS OF THE MAYO CLINIC AND THE MAYO FOUNDATION, Rochester, Minnesota. Octavo of 1331 pages, 254 illustrations. Philadelphia and London. W. B. Saunders Company, 1925. Cloth, \$13.00 net.

This volume is a complete reference record of all papers for the year 1924 from the Mayo Clinic and the Mayo Foundation. The lists of contributors is long and the subject covers diseases of the alimentary tract urogenital organs, ductless glands, blood and circulatory organs, skin and syphilis, head, trunk and extremities, brain, spinal cord and nerves, technic, etc.

Original Articles

A SUGGESTED ANALOGY BETWEEN HYPERTHYROIDISM AND GASTRIC ULCERS*

GEORGE W. CRILE, M. D.

Cleveland Clinic

CLEVELAND, O.

The importance of a consideration of peptic ulcer as a manifestation of a kinetic drive has been suggested by various recent articles on gastric and duodenal ulcer which have appeared in the literature, as has the point of view that peptic ulcer is a final manifestation of a general systemic condition which must be primarily considered in its management. Thus, Smithies, as a result of the study of "2160 operatively proven duodenal ulcers and 876 similarly demonstrated gastric ulcers" concludes "that peptic ulcer is not only the local duodenal or the gastric complication of an acute transient or a chronic, progressive, systemic disturbance of varied etiologic origin but that its clinical management cannot promise hope of success if the local gastric or duodenal defect receives practically all the attention, while the primary systemic fault is allowed to progress unrestrained." This fact alone is sufficient to explain the great divergence of opinion as to the immediate cause of gastric and duodenal ulcer. Whether or not such a final cause shall ever be securely established it is obvious that its action is marked by these general contributing factors. Thus infection may be the immediate cause but the cause is not infection alone; it is not thrombosis alone; it is not hyperacidity alone; it is not auto suggestion alone; it is not emotional or physical strain alone; it works in the presence and in the absence of focal infection; it works in the presence and in the absence of hyperchlorhydria. But the presence of any of these abnormal conditions may be the factor which causes a lesion in the individual attacked, in the weakest spot; thus in one the thyroid gland may be the point of attack; in another the kidneys; in another the pancreas; in another the stomach. That peptic ulcer is characterized by the presence of hypersecretion of the gastric juice is generally acknowledged, though whether or not hyperacidity is a causative factor is disputed. While Smithies asserts that "hyperacid-

ity does not mean ulcer, nor does ulcer indicate hyperacidity," Mann and Williamson by experiments on dogs have produced typical subacute or chronic peptic ulcers experimentally by diverting the secretions which neutralize the gastric juice as it leaves the stomach thus increasing the degree of acidity; and Deaver in a paper delivered a few months ago makes the statement:

"As to the gastric chemistry, it is pretty well acknowledged that some change in the chemistry of the stomach and ulcer go hand in hand, the change usually consisting of a hyperchlorhydria. I say usually, because I am well aware that not all cases of peptic ulcer are associated with hyperacidity, but the relationship between the two is sufficiently frequent to be more than incidental. Whether the hypersecretion, when present, produces the ulcer, or the ulcer the hypersecretion is still a matter of argument. While the consensus of opinion seems to be that hyperacidity is first present, it nevertheless would seem that the ulceration once formed without doubt maintains the hypersecretion, thus creating a vicious circle with its attendant clinical symptoms and pathological manifestations. In other words, hyperacidity prepares the way for the action of whatever secondary factors, usually of an infectious or toxic nature, may be at work in the pathogenesis of chronic peptic ulcer.

The fact that the pylorus and the lesser curvature are the parts of the stomach most frequently attacked by ulcer signifies the direct relation of hyperacidity to ulcer formation. In our series, ulcer of the stomach has been situated in the pylorus or lesser curvature in 81.5 per cent of the cases—in the pylorus in 52 per cent. Moreover, it is significant that there is no chronic ulcer of the mouth, of the esophagus or of the small intestine when there is no free hydrochloric acid. Ulcer occurs only where there is free acid, namely, in the stomach and duodenum.

Aside from the hyperfunction of the mechanism which governs the gastric secretions which is analogous to the hyperfunction of the thyroid gland in hyperthyroidism, the following facts are significant in their bearing upon the 'kinetic' factors in the production of peptic ulcer and in their further indication of the analogy between peptic ulcer and hyperthyroidism. The occurrence of peptic ulcer is more common in young adults.

A study of the records of 125 of our cases showed the highest incidence between the ages of 30 to 40 years, while 94—75 per cent were under 50 years of age. The histories of these cases show, moreover, that in the majority of cases the patient presented himself for treatment

*Address in surgery before the Illinois State Medical Society, Quincy, May 20, 1925.

with a history of repeated attacks of 'indigestion' or 'dyspepsia' extending over long periods. Thus in this series the duration of symptoms was more than ten years in 18 cases—14 per cent, more than five years in 28 cases—22 per cent, and more than 2 years in 58 cases—46 per cent. In 6 cases the symptoms had been present for over 20 years. According to Smithies 20 years is the average length of time which has elapsed since the first remembered attack. It is more common in individuals of strenuous occupations associated with nervous strain.

These facts regarding peptic ulcer indicate the similarity of the phenomena accompanying the incidence and course of peptic ulcer and the incidence and course of hyperthyroidism. Hypersecretion of acid is the central feature of, if not the actual cause of peptic ulcer; hypersecretion of the thyroid hormone is the central feature of, if not the actual cause of hyperthyroidism. Hyperacidity and hyperthyroidism both tend to elect young adult life; both flourish in the atmosphere of stress and striving. Hyperthyroidism and hyperacidity are induced and are augmented by overwork, by worry, by focal infections, by autointoxication; both are increased by a high protein diet; both are associated with a changed personality; both are improved by a holiday with complete change of environment—by camping, fishing, hunting, traveling, motor-ing, by the substitution of favorable news for bad news, of assurance for anxiety; both tend to chronicity or to relapse. Neither is prevalent among inferior races, among the indolent or dullards of higher races or among degenerates, morons or the insane; both flourish in driving, compelling, ambitious, conscientious personalities. Both are prevalent among individuals of keen desires and internal struggle: among those who grieve and fret. In general, the incidence of both peptic ulcer and hyperthyroidism is highest in those men and women of the white race who are carrying the burden of civilization.

Moreover, as is indicated by the peculiarities of these individuals, the successful management of both hyperthyroidism and hyperacidity requires a re-education, a new point of view regarding life, a new philosophy, no less than rest and diet and surgery. In each of these conditions, therefore, the result of medical management which ranges from no relief to permanent recovery, depends on the personal equation of the medical

advisor, and equally upon the personal equation of the patient.

In view of these analogies it is not surprising to find a like controversy as to the relative values of medical treatment and of surgery in the treatment of peptic ulcer which is analogous to that which has been waged in connection with the treatment of hyperthyroidism. Medical treatment plus rest relieve the symptoms of peptic ulcer; medical treatment plus rest relieve the symptoms of hyperthyroidism. In cases of peptic ulcer the period of freedom from symptoms is in direct relation to the length and periodicity of adherence to a properly controlled hygienic regimen. The same is true of hyperthyroidism. A return to the former environment or a breaking away from the prescribed regimen is accompanied by a return of the symptoms of peptic ulcer. The same is true of hyperthyroidism. It would appear logical, therefore, that in the case of peptic ulcer, that portion of the mucosa, the resistance of which has already been weakened, should be removed and that the possibility of hypersecretion, a certain and aggravating factor, if not the immediate cause of the ulcer should be removed. In other words, hyperthyroidism should be removed; and at this point our analogy fails for hyperthyroidism has been all but conquered. It is true that there exists some controversy as to the method of choice for the reduction of the secretory tissue whether it is best accomplished by radiation or by surgery, but nevertheless the consensus of opinion is that such a reduction is the only method by which a final cure can be effected. No such uniformity of opinion exists regarding the hypersecreting stomach in spite of the uniform failure of all other methods of treatment. Thus the Sippy treatment alone is temporizing; gastroenterostomy, as Moynihan states, offers trivial advantages; sleeve resection cripples the motility of the stomach; cauterization substitutes a burn and a scar for the existing ulcer, if it is only an ulcer; and if it is a cancer then cauterization is certainly inadequate, for it leaves untouched the fundamental cause of the ulcer which preceded the cancer. Pyloroplasty in the treatment of ulcers of the lesser curvature would seem analogous to excision of the thymus for hyperthyroidism.

As for duodenal ulcer, according to the reports of Balfour of the Mayo Clinic, the method

of treatment would appear to be established. Our own results compare favorably with his report that "In duodenal ulcer, gastroenterostomy, combined, of necessity, with excision of ulcer, gives 95 per cent. of satisfactory results, and a mortality rate between one and two per cent.; combined as a routine with cautery or knife excision of the ulcer, 90 per cent. satisfactory results and a mortality rate between two and three per cent., are claimed." These results present a marked contrast to the larger mortality and the many complications which follow gastroenterostomy for gastric ulcer. The unsolved problem is the treatment of the chronic gastric ulcer, especially the ulcer with a heavy indurated base and adhesions. As a prime impetus to the intensive study of this problem we should frankly admit that in the treatment of gastric ulcers of this type both medicine and surgery have failed. Until recently the surgical treatment of gastric ulcer has been in the tentative position of surgery of the thyroid before the thyroidectomy of Koehler.

In a recent visit to the clinic of Moynihan and to clinics in Scandinavia, I found that everywhere gastroenterostomy had given place to gastric resection, for the definite purpose of reducing hypersecretion, just as thyroidectomy is performed to reduce the thyroid secretion. Moynihan, Schoemaker, Finsterer and Haberer have an immediate mortality of from two to three per cent. and each reports that his clinical results are wholly different from the results of gastroenterostomy, of cauterization or of local excision: that is to say, the operative objective is changed from the excision of the lesion or drainage or alkalization, to the fundamental underlying cause of the condition; namely, the hypersecretion itself. Moreover, not only is the ulcer-provoking hypersecretion controlled, but the common site of cancer of the stomach is removed.

One objection to this radical procedure seems to be the wide opening in the jejunum. This I have found is readily overcome by a modification in technic whereby the large opening in the stomach is adjusted to a small opening in the jejunum.

Since shock and hemorrhage are controlled by seizing and holding the initiative by blood transfusion, water, morphin and rest and by a shockless operation achieved by local anesthesia,

nitrous-oxid-oxygen analgesia and minimum trauma, the feeblest patients can be carried through successfully. Not only the results of the operation itself, but infections also are controlled by the technical management and the maintenance of general resistance.

Finally, and here again the ever present analogy with hyperthyroidism presents itself—the operation is but one factor in the final result. Recovery demands a prolonged control of the patient under a regimen of enforced rest, prescribed diet and adjusted environment.

The repair of herniae, the removal of a diseased appendix, operations upon bones and joints, operations for the removal of benign and malignant tumors are for the repair of pathologic anatomical conditions; operations for hyperthyroidism and disturbed gastric function are occasioned by a pathologic physiological condition. The line of problems presented by these conditions must, therefore, be interpreted in terms of physiology and not in terms of anatomy.

For the present in our clinic we have adopted the following general plan of treatment:

1. All patients with acute gastric or duodenal ulcers are referred first to the medical department for treatment and management.

2. If medical relief does not appear within two weeks the patient is referred to the surgical department.

3. In cases of duodenal ulcer Finney's pyloroplasty is used if local conditions, such as adhesions, permit; in suitable cases a gastroduodenostomy is made; in all others a posterior gastroenterostomy.

4. In cases of calloused gastric ulcer, and of peptic ulcer following gastroenterostomy for duodenal ulcer, a wide resection of the stomach, including the pylorus, is made. This produces a permanent reduction in gastric secretion and up to the present time has been followed by better clinical results than have heretofore been secured.

These analogies and the present plan of management, which has proved effective in the treatment of hyperthyroidism and of gastric ulcer, which involves in each case the reduction of the hypersecreting tissue, have been based upon my personal experiences in 9,400 operations on the thyroid, including 6,427 thyroidectomies, of which 3,663 were for hyperthyroidism, and the experience of my associates and myself in 1,009

operations on the stomach, of which 235 were for ulcer of the stomach. This last series include 47 partial gastrectomies for ulcer.

EFFECTIVE TREATMENT OF OSTEO-MYELITIS BY ALUMINUM-POTASSIUM NITRATE*

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Most surgeons are familiar with the distressing picture presented by patients suffering from chronic suppurative bone disease, especially osteomyelitis. The various therapeutic measures, including surgery, devised for the relief of this condition have only given a modicum of success. The history of these cases is often a mournful succession of operations for continuous exacerbations of the disease; some patients spend a miserable incapacitated existence until relieved by death.

The writer's experience in the surgical treatment of chronic osteomyelitis having paralleled the general experience, he was led to the investigation of some more effective method of dealing with the condition, more especially since the world war had brought a number of methods of dealing with infective processes to an effective test.

It was found that methods of treatment based upon the use of antiseptic or germicidal agents, including the anilin dyes, were open to the objec-

there is a mechanical difficulty in bringing the antiseptic or germicide into close association with the chronic bone process. It was further observed that, in order to be really effective, the method of treatment must be a biological one by which the natural tendency of processes within the

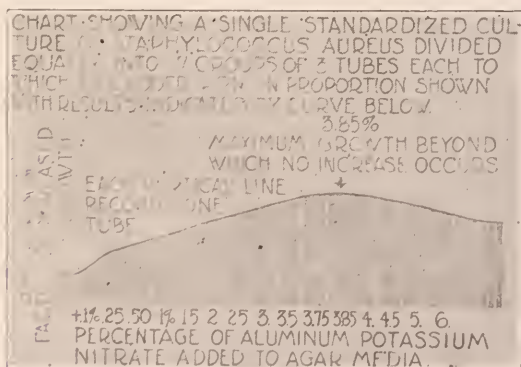


Fig. 1.

tion that they either fail to fulfill the desiderata of low toxicity, high germicidal index and freedom from after-effects which tend to delay or inhibit natural regenerative processes, or else



Fig. 2. Typical A. P. N. skin reaction.

body to eliminate invading or infecting organisms should be availed of. The method sought for should be one which would marshal the natural biological defensory power to the site of attack.

From observations in the meat preserving industry and from some scattered reports in lit-

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erature, potassium nitrate was known to be an effective oxidizing agent; but, on using applications of potassium nitrate alone in a number of clinical cases, the writer found that although it was effective, it produced such irritation and sloughing, together with maceration

which the double salt $\text{Al}(\text{NO}_3)_3 \cdot 3\text{KNO}_3 \cdot 10\text{H}_2\text{O}$ will crystallize out on cooling, and after drying the product it contains approximately 31 per cent. aluminum nitrate, 44 per cent. potassium nitrate and 25 per cent. water of crystallization. About 500 c. c. of concentrated nitric acid, kept hot by means of the water bath, is a suitable quantity of acid in which to dissolve one kilo of aluminum nitrate and potassium nitrate mixed in the proportions indicated. The product is further diluted with nine parts of potassium nitrate and the resulting mixture is incorporated in the dressing used in the treatment which will presently be described.

Animal experimentation has shown that the compound, used either orally or by the subcutaneous, intravenous or intraperitoneal routes, was entirely non-toxic, even in dosage much higher than that used externally in the treatment of human affections.



Fig. 3-A. H. S. Case 20286. Male. Age 34. X-ray taken on admission to hospital showing fragments of shrapnel, also osteomyelitis in region of lesser trochanter.

of surrounding normal tissues that its use alone was almost prohibitive. In order to obtain the maximum therapeutic value of potassium nitrate applications in an area of chronic suppurative disease, it became evident that some modifying agent should be employed. This agent was found in astringent and non-irritative aluminum nitrate. It was necessary, however, that the combination of the salts should be effected in a particular manner, otherwise the combination could disintegrate and the potassium nitrate again exercise its irritative and macerative properties.

The aluminum-potassium-nitrate compound now used is prepared by crystallizing aluminum nitrate and potassium nitrate from concentrated nitric acid which does not cause hydrolysis of the aluminum nitrate. The quantity of aluminum nitrate and of potassium nitrate used should be in the proportion of the molecular weight of one molecule of aluminum nitrate to three times the molecular weight of one molecule of potassium nitrate. For example, 375 grains of aluminum nitrate and 303 grains of potassium nitrate in sufficient hot concentrated nitric acid to dissolve the substance, will produce a solution from



Fig. 3-B. H. S. Case 20286. Male. Age 34. Three months after removal of foreign bodies. A. P. N. started 9-3-24.

The action of the aluminum-potassium-nitrate compound was found, both experimentally and clinically, to be quite different from that of antiseptics and germicides. It actually assists and intensifies the growth of bacteria when added to culture media. (Fig. 1.) Its



Fig. 3-C. H. S. Case 20286. Male. Age. 34. After 58 days of A. P. N. treatment, Dec. 2, 1924.

action also differs in this respect from that of dyes which inhibit the growth of bacteria.

The aluminum-potassium-nitrate compound is applied directly to the skin over the affected area in a plastic dressing into which the compound is incorporated. A very suitable vehicle is prepared from ordinary rolled oats sterilized for two hours, in order to destroy the proteolytic enzymes which would otherwise tend to invert or sour it. The vehicle is made by adding about 50 c. c. of boiling water to the ounce of dry rolled oats and stirring until a uniform mass is produced, after which the aluminium-potassium-nitrate compound is added and thoroughly mixed. The average dose is approximately thirteen grains of the compound to the ounce of dry rolled oats. The dressing is applied about one-eighth of an inch thick, directly to the skin, well beyond the limits of the affected area, and is covered over with some waterproof material, such as oiled silk. The dressing must remain absolutely in contact with the skin continuously and should be changed as often as it becomes saturated with secretions and at least once in thirty-six hours.

If the aluminum-potassium-nitrate compound be applied in a non-plastic medium, such as a gauze pack, it does not produce any of the typical reactions or effects following its application in the manner above described.

The first effect and typical reaction is the appearance of an erythema manifested within forty-eight hours. This is followed by the appearance of pustules and vesicles containing purulent fluid confined to the area affected. (Fig. 2.) This definite reaction continues while infection persists in the underlying deep tissues.

Since the discovery of the curative properties of aluminum-potassium-nitrate compound in chronic suppurative diseases considerable more than 100 cases have been successfully treated by the method in The American Hospital, Chicago. These included bone tuberculosis, where secondary infection was an added complication, various postoperative wound infections, gangrene, and a large series of cases of osteomyelitis. In this paper, however, I desire only to refer to the value of the method in the treatment of chronic osteomyelitis, especially of the long bones.

It will, therefore, be convenient to here discuss the clinical effects of applications of the



Fig. 4-A.

Fig. 4-B.

Fig. 4-A. M. M. Case 15279. Male. Age. 38. X-ray taken at beginning of A. P. N. treatment.

Fig. 4-B. M. M. Case 15279. Age. 38. X-ray taken 13 months after beginning of A. P. N. treatment.

compound in cases of this kind, that is to say in chronic cases of osteomyelitis with sinus formation, of many years' standing, where there has been only a thin serous discharge in which microscopically a few epithelial cells and an occasional leukocyte may be seen. Within twelve

application of the aluminum-potassium dressing, and it will be found that there is a tremendous increase in the volume and a great change in the character of the discharge, which now consists almost entirely of leukocytes and debris. If the dressing be discontinued the discharge will subside and in a few days return to its original amount and character. There must necessarily be an acute biological reaction within the tissues producing a rapid autolysis and liquefaction of the pathologic products within the diseased area. This liquefaction and autolysis is produced, first, by the influx of leukocytes and phagocytes, and, second, by nascent oxygen set free and acting on the diseased tissues without



Fig. 5-A. R. P. Case 629. Female. Age 11. A. P. N. treatment begun April 28, 1923.

to twenty-four hours after application of the dressing, there appears a marked purulent discharge containing innumerable polymorphonuclear leukocytes and tissue shreds, although no reaction is yet apparent on the skin. This indicates that in these twelve to twenty-four hours some element from the dressing must have dialyzed through the skin into the deeper tissues in order to produce this acute reaction calling forth an increased leukocytosis expressed in terms of increased pus discharge.

That dialyzation occurs through the skin may further be proved by inserting a tube into the existing sinus, sealing the tube to the surrounding skin, and observing the volume and character of the discharge before any dressing is applied. A comparative observation is then made after



Fig. 5-B. R. P. Case 629. After 7 months of A. P. N. treatment. Nov. 29, 1923.

affecting the normal tissues. The nascent oxygen is probably derived by the splitting of the nitrate ion in its passage through the skin into the deeper tissues. It is on account of its value as an oxidizing agent that potassium nitrate is used in the meat curing industry. Nascent oxygen does not alter normal healthy tissue but the infiltrated tissues, which are contaminated with

organisms, are affected by the aluminum-potassium compound and for these it has a selective action.

The vesicle and pustule formation probably results from stimulation of latent bacteria into marked activity by the aluminum-potassium-nitrate compound which has been proved to be an excellent culture medium. How this action is brought about, and whether it is dependent upon the well known properties of nitrogen in favoring bacterial propagation and growth, the writer is unable to say. It is desired merely to



Fig. 5-C. R. P. Case 629. X-ray taken June, 1924. Six months after completion of treatment. No recurrence.

refer to the clinical and therapeutical effects which are observed. Clinically the pustules seem to connect with the deeper tissues and fine probes can be passed through the skin pustules into the bone cavity in cases of osteomyelitis.

In the case of a small area of osteomyelitis in the middle third of the femur, with infiltration of the adjacent soft tissues, a dressing applied over the entire length of the femur will not produce a typical reaction on the skin throughout

the length of the area covered by the dressing, and no vesicles or pustules will appear beyond the affected or infected areas. The aluminum-potassium-nitrate compound is, therefore, apparently selective in its action because it produces no reaction where no pathogenic organisms are present. The reaction definitely outlines the area of infection, and the vesicles and pustules culturally in almost every instance showed the same organisms that are isolated from the deeper tissues.

The exudate after application of the nitrate dressing will be found to contain a markedly increased number of organisms; but also the virulence of these microbes will be found to decrease in proportion to the increased rate of propagation. At the same time the resisting elements of the natural forces are increased as made evident by the extreme local leukocytosis and phagocytosis. Moreover, the increased local exudation gives relief through the elimination of noxious products which, prior to the institution of treatment, were absorbed, producing the usual systemic effects due to the action of toxins. This increased local elimination of toxins permits the natural organs of elimination to recuperate and resume their normal functioning. The general systemic improvement, following the application of the dressing, is frequently startling. The flexibility, appearance and functioning of all tissues are often restored to a surprising degree in an astonishingly short space of time.

It should be remarked that no definite dosage of aluminum-potassium-nitrate compound can be laid down as applicable to all cases. The dosage varies with the case and with the patient. The safe and rational clinical procedure would be to start with a small dose (say five grains per ounce of vehicle), and gradually increase it to the limit of individual sensitivity.

In the American Hospital, Chicago, since the inception of the aluminum-potassium-nitrate method of treatment of osteomyelitis a great many cases have been treated. These cases are shown in the accompanying tabular statement and comprise all types of this affection, both traumatic and hematogenous. In many of the cases the nitrate treatment was used as a preliminary to operation; in others as a post-operative treatment. In a large number of the cases in which the treatment was instituted as a prelimin-

nary to operation it was found that the results from the aluminum-potassium treatment were so good as to obviate surgery. The use of aluminum-potassium-nitrate, as herein described, is not suggested in any way as a substitute for rational surgery when indicated, as in acute fulminating cases of osteomyelitis, but only as a pre- or post-operative treatment of chronically infected cases. The preoperative treatment enables the surgeon to work under more favorable conditions when surgery is indicated, and the post-operative use generally shortens hospitalization as well as obviating many secondary operations.

The photographs and radiographs of several of these cases are given to show the type of cases treated. These pictures also show the gradual effect of the treatment and the final results. In this regard the illustrations speak better than any amount of description and convey adequately what may be expected from the aluminum-potassium-nitrate method of treatment of osteo-

myelitis when persistently carried out according to the technic described. The cases illustrated are not specially selected, but are typical of the general run of cases as they present themselves in the clinic, and of the results obtained when such results are favorable.

Of the fifty-five cases treated twenty-nine were clinically cured and twenty-five showed a greater or lesser clinical improvements.

These results are so vastly superior to those obtained by methods previously employed, including surgery alone, that they may be fairly considered as indicating a new era in therapeutics of this condition.

I may add that other surgeons, who have watched this method and who themselves have put it into practice, have been very favorably impressed, and it is my hope that the method, as described, may be tested in a more extensive scale, by different surgeons and the results collected and reported.

TABULATION OF THE RESULTS OF TREATMENT OF FIFTY-FIVE CASES OF OSTEOMYELITIS

Patient	Hosp. No.	Clin. No.	Age	Sex	Previous History	Diagnosis and Condition on Admission	Treatment	Result	Surgeon
Patient	Hosp. No.	Clin. No.	Age	Sex	Previous History	Diagnosis and Condition on Admission	Treatment	Result	Surgeon
Patient	Hosp. No.	Clin. No.	Age	Sex	Previous History	Diagnosis and Condition on Admission	Treatment	Result	Surgeon
Patient	Hosp. No.	Clin. No.	Age	Sex	Previous History	Diagnosis and Condition on Admission	Treatment	Result	Surgeon
Patient	Hosp. No.	Clin. No.	Age	Sex	Previous History	Diagnosis and Condition on Admission	Treatment	Result	Surgeon
Patient	Hosp. No.	Clin. No.	Age	Sex	Previous History	Diagnosis and Condition on Admission	Treatment	Result	Surgeon
Patient	Hosp. No.	Clin. No.	Age	Sex	Previous History	Diagnosis and Condition on Admission	Treatment	Result	Surgeon
Patient	Hosp. No.	Clin. No.	Age	Sex	Previous History	Diagnosis and Condition on Admission	Treatment	Result	Surgeon
Patient	Hosp. No.	Clin. No.	Age	Sex	Previous History	Diagnosis and Condition on Admission	Treatment	Result	Surgeon
Patient	Hosp. No.	Clin. No.	Age	Sex	Previous History	Diagnosis and Condition on Admission	Treatment	Result	Surgeon
Patient	Hosp. No.	Clin. No.	Age	Sex	Previous History	Diagnosis and Condition on Admission	Treatment	Result	Surgeon
Patient	Hosp. No.	Clin. No.	Age	Sex	Previous History	Diagnosis and Condition on Admission	Treatment	Result	Surgeon
J. N.	.....	675	33	M.	Two teeth extracted by Dr. Pfister.	Traumatic osteomyelitis of lower jaw.	A. P. N. treatment Aug. 14 - Oct. 30, 1923.	No deformity. Cure.	Thorek
M. M.	21246	663	11	F.	Four previous curettements of tibia.	Osteomyelitis of left tibia and lumbar spine.	Treatment started July 18, 1924.	Abscess on lumbar region healed up Sept. 2, 1924. While still under treatment marked improvement noted. Able to walk normally.	Thorek
M. M.	20118	661	13	M.	Two previous operations on left tibia.	Osteomyelitis of left tibia and right femur complicating pulmonary tuberculosis.	A. P. N. treatment began April 8, 1924.	Left tibia free of infection Aug. 18, 1924; still under treatment for right femur; improved.	Thorek
L. C.	19837	696	45	F.	Gunshot wound in 1900. Operated on elsewhere for removal of osteomyelitic focus, Nov., 1923.	Osteomyelitis of left femur including knee. X-ray shows many buckshot in knee and soft tissues immediately above.	A. P. N. treatment started March, 1924.	Patient left hospital April 3, 1924, free from pain. Sept. 5, 1924, no signs of recurrence; sinus closed. Cured.	Thorek
F. K.	16895	618	25	M.	Reduction of fracture and wiring.	Osteomyelitis following compound comminuted fracture of right femur.	A. P. N. treatment Sept. 25-Nov. 18, 1923., and July-Oct. 26, 1924.	Complete cleaning up of osteomyelitic focus. Cured.	Thorek
L. M.	19293	660	33	F.	Incision on back of hand with drainage of hand Aug. 13, 1923.	Osteomyelitis and acute infection of tissues of dorsum of hand.	A. P. N. treatment Aug. 14, 1923.-Feb. 29, 1924. Incision on back of hand with drainage of hand.	Incision healed about 75% of normal function retained. Cure with slight limitation of motion.	Thorek

A. M.	.....	616	19	M.	Two previous operations on lower 3rd of humerus for osteomyelitis.	Osteomyelitis of right elbow. Elbow limited in motion, infiltrated and swollen.	A. P. N. treatment June 1-Nov. 10, 1923.	Full motion restored; x-ray examination shows regeneration of osseous defects. Examination Mar. 15, 1924, shows no sign of recurrence. Cured.	Thorek
M. M.	15279	659	38	F.	Four previous operations for relief of osteomyelitis of femur without success.	Osteomyelitis of femur (lower third).	A. P. N. treatment Dec. 23, 1923; still under treatment.	X-ray examination shows progressive and marked improvement.	Thorek
G. M.	.....	624	11	M.	Three previous operations for relief of osteomyelitis of left tibia and foot.	Osteomyelitis of left tibia and foot. X-ray showed spiral oblique pathologic fracture of tibia.	A. P. N. treatment started Sept. 23, 1923; still under treatment.	X-ray shows complete involucrum formation with segment of old cortex as sequestrum. Operative removal of sequestrum declined. Improved.	Thorek
J. L.	.....	715	48	M.	Infection of 8 years standing, not operated.	Osteomyelitis of small bones of wrist; three small discharging sinuses.	A. P. N. treatment started July 16, 1924.	Patient remained in Chicago one week, then returned to Canada, continuing treatment himself. Reports great improvement; is regaining use of hand. Markedly improved	Thorek
D. K.	16861	688	21	F.	.....	Osteomyelitis of head of 1st metatarsus; operation declined.	A. P. N. treatment Aug. 10-Sept. 25, 1923.	Sinus completely healed. Patient returned to work as housemaid. Cured.	Mazel
E. D.	16402	679	58	F.	Previously operated on at Postgraduate Hospital, Chicago, further operative interference declined.	Osteomyelitis of left knee with much scar tissue formation.	A. P. N. treatment Nov. 9, 1922-Mar. 22, 1923.	Patient able to walk without crutches for 1st time in 2 years; improved.	Thorek
H. H.	.....	698	28	M.	Six previous operations, last at Presbyterian Hospital, Chicago.	Osteomyelitis of both tibiae. X-ray shows results of operative interference; foci and some low grade activity present.	A. P. N. treatment Dec. 9, 1922-Jan. 25, 1923.	All areas granulated and epithelized. Cured.	Thorek
V. G.	16189	701	34	F.	.....	Osteomyelitis of left knee.	Placed in extension; A. P. N. treatment June 13-July 23, 1923.	Patient left hospital; able to walk without pain. Improved.	Buehler
L. G.	.....	697	30	F.	Three previous operations proved futile as to cure.	Osteomyelitis of right tibia. X-ray shows activity in middle 3rd of tibia; one sinus with small amount of drainage; considerable pain.	A. P. N. treatment Jan. 21-April 14, 1922.	Sinus healed; all symptoms cleared up. Examination Feb. 2, 1924, shows no recurrence. Cured.	Thorek
D. D.	.....	710	28	F.	No previous operation.	Osteomyelitis of left humerus. X-ray shows considerable destruction of lower half of left humerus; operative interference declined at this time; arm considerably swollen, flexed and painful to any motion.	A. P. N. treatment Aug. 20, 1923-Jan. 29, 1924.	Apparently cured; full function of limb.	Thorek
R. B.	16201	668	5	M.	Affection treated 3 weeks as sprain and brought to hospital when temperature rose to 102° F.	Osteomyelitis of left ankle. X-ray shows involvement of talus, os calcis and lower end of tibia.	Incised and packed by Dr. Thorek, May 15, 1923, and A. P. N. treatment started May 18, 1923, continuing until July 26, 1923.	Discharged healed and walking. Examined Nov., 1923, and May, 1924, and found normal. Cured.	Thorek
L. A.	.....	605	23	F.	Treated for 6 mos. previously for rheumatism; no operative history.	Osteomyelitis of upper third of femur.	A. P. N. treatment begun Feb. 11, 1924.	X-ray shows progressive improvement, still under treatment; will probably be discharged as cured within the next month.	Kennedy
C. T.	.....	693	9	M.	No history of trauma.	Osteomyelitis of thumb. X-ray shows destruction of terminal phalanges.	Incised by Dr. Thorek, July 15, 1924. A. P. N. treatment July 17-Sept. 3, 1924.	X-ray shows regeneration of terminal phalanx involucrum incorporating the fragments of original bone. No sequestra (seen in early x-rays) removed or worked out. Full function; no deformity of thumb. Cured.	Thorek

L. S.	19233	692	13	M.	Discharging sinuses for past 7 years. No history of trauma.	Osteomyelitis of right femur.	Incision and curettement by Dr. Thorek. A. P. N. treatment Jan. 8-Mar. 22, 1924.	Sinuses healed. Cured.	Thorek
Dr. R.	.....	622	51	M.	Three incisions along midline of 2nd finger on right hand made elsewhere.	Osteomyelitis of second finger of right hand following scratch 7 weeks earlier. X-ray shows pathologic fracture of 2nd phalanx.	A. P. N. treatment Dec. 17, 1923-Jan. 28, 1924.	Complete involucrum formation and good function.	Thorek
W. P.	.....	685	52	M.	Left tibia injured by tube cleaner flying out of boiler and hitting leg just below knee 2 years ago. No operation.	Osteomyelitis of tibia. X-ray shows area of active osteomyelitis about 2 inches square just below epiphyseal line; one small sinus discharging purulent fluid.	A. P. N. treatment begun March 22, 1924; still under treatment.	X-ray shows progressive improvement; case approximately 80% cured.	Thorek
M. P.	20012	694	65	F.	Slipped on sidewalk ten years ago fracturing ankle.	Osteomyelitis of right ankle. Examination shows ulcerated area over internal malleolus; sinus exuding pus; x-ray shows evidence of old fracture with chronic osteomyelitis of lower 3rd of tibia.	A. P. N. treatment; Mar. 23-May 4, 1924.	Sinuses healed.	Thorek
M. S.	18262	631	60	F.	Pain started 1½ yrs. ago, became acute 2 weeks ago; extreme pain at slightest movement of arm; no history of trauma. Laparotomy at St. Joseph's Hospital, 1917.	Osteomyelitis of left shoulder; x-ray shows general involvement of shoulder articulation; x-ray pictures of gall-bladder region and teeth excluded possible arthritis.	A. P. N. treatment begun Sept. 3, 1923.	Left hospital free from pain Sept. 16, 1923. Discharged improved Feb. 18, 1924. Examination July 20, 1924, shows no return of activity, no symptomatology.	Mandel
F. O.	19593	623	...	M.	.....	Active luetic osteomyelitis of left tibia and right femur. Appeared at hospital Feb. 8, 1924, with acute osteomyelitis of right humerus.	A. P. N. treatment May 2-Sept. 8, 1923. Again A. P. N. treatment Feb. 12-24, 1924.	Pain subsided; patient working, not entirely healed; did not continue treatment. No further record of patient.	Mazell
R. P.	18208	629	11	F.	Four operations at American Hospital from Dec. 11, 1920-Feb. 21, 1922.	Osteomyelitis of left tibia and right humerus. Returned to hospital Apr. 27, 1923, with denuded area overlying tibia showing necrotic bone beneath. Right humerus affected; arm hard, swollen and painful.	A. P. N. treatment Apr. 28-Nov. 29, 1923. Tonsillectomy Aug. 28, 1923.	Cured. Examination in June, 1924, showed no recurrence.	Thorek
B. B.	18812	627	49	F.	Pain dates from fall about 2 years before. Appendectomy and oophorectomy at other hospitals.	Osteomyelitis of lower 3rd of femur. Pain along inner aspect and popliteal area. X-ray shows erosion along lower part of femur extending to border of condyle.	A. P. N. treatment Sept. 27-Nov. 4, 1923, when fluctuation appeared in deep popliteal space. Opened by Dr. Kennedy Nov. 5, 1923. A. P. N. treatment Nov. 7-Dec. 11, 1923.	Sinus healed; no pain; x-ray shows beginning new bone formation. Examination June, 1924, shows progressive regeneration.	Kennedy
M. S.	.....	634	5	F.	No history of trauma, started as boil 5 months ago and has been treated with various ointments, etc.	Osteomyelitis of 10th and 11th right ribs. X-ray shows area along border of 10th and 11th ribs involved.	A. P. N. treatment Nov. 1, 1923-Feb. 20, 1924.	Examined May 20 and July, 1924; no recurrent symptoms. Cured.	Thorek
Dr. M.	.....	647	31	M.	No history of trauma, has been treating same as articular rheumatism for past two years.	Osteomyelitis of right humerus. X-ray shows involvement of upper 3rd of humerus, most active near epiphyseal line.	A. P. N. treatment May 19-Sept. 14, 1923.	No further symptoms.	Mandel
R. T.	18360	637	8	M.	.....	Tuberculous osteomyelitis of left femur. X-ray shows entire shaft involved with extension into acetabulum; also erosion at 4th and 5th lumbar bodies. Leg much swollen and painful; cannot move it himself.	A. P. N. treatment Sept. 12-Oct. 5, 1924.	Sinus healed. Case still under observation.	Thorek

G. A.	.....	638	4	M.	Two previous operations elsewhere. Brought to hospital June 15, 1923, after 6 months' treatment by a Christian Science practitioner.	Osteomyelitis of upper third of right humerus.	Has come in spasmodically for dressings. Mother and relatives of patient favor Christian science treatment, which he gets regularly.	No improvement. Last seen Sept. 5, 1924, after absence of 4 months.	Thorek
H. H.	19376	640	43	M.	Had 22 operations for osteomyelitis on right femur from 1880-1920.	Osteomyelitis of right wrist. X-ray shows chronic type of osteitis of radius from epiphyseal line at wrist upward for about 6 in.; no external manifestations; severe pain at intervals.	A. P. N. treatment of femur from Feb.-Nov., 1921. No operations on wrist. Pathologic process intermittently active for past 28 years. Operated by Dr. Thorek Jan. 28, 1924. Two small holes drilled in radius for drainage. A. P. N. treatment Jan. 30-Mar. 2, 1924.	Healed, no further symptoms to date. Cured.	Thorek
A. C.	20536	641	59	M.	Injury to leg with an ax in 1872; no developments until 1905, 33 years later, when pain developed and large amount of pus and sequestra appeared. Operated on 1879, 1885, 1915, 1916 and 1917. Suppuration has been continuous since 1917.	Osteomyelitis of right tibia. X-ray shows active infection of upper 3rd of right tibia without evidence of regeneration from previous surgical interference.	A. P. N. treatment May 9-June 18, 1924.	No drainage, no pain; patient returned to his home in Michigan.	Thorek
Dr. J. M.	.....	646	32	M.	Osteomyelitis of left hip over 10 years ago, leaving a decided limp.	Osteomyelitis of right humerus and scapula. X-ray shows extensive involvement of upper half of humerus and anterior border of scapula. Patient unable to move arm without extreme pain.	A. P. N. treatment May 8-Nov. 30, 1923.	Condition improved rapidly; 6 weeks after beginning of treatment had resumed full work. No recurrence.	Thorek
A. H.	.....	649	21	F.	History indicates gonococcic involvement.	Osteomyelitis of left elbow. X-ray shows involvement of articular surfaces of both radius and humerus with impending ankylosis due to involucrum formation at margin of articulation.	Two applications of A. P. N. Patient did not return.	Dr. Mandel advises that patient's father send her to New York for treatment.	Mandel
G. K.	.....	651	34	M.	Condition of 7 years duration. No operations.	Osteomyelitis of upper third of left femur. X-ray shows medullary involvement of upper 3rd of femur extending into neck.	A. P. N. treatment started May 4, 1924.	Patient came to Clinic until May 21, 1924, and has not been heard from since.	Thorek
W. W.	.....	653	56	M.	Operated on once at Cleveland 4 years ago. Wound never healed.	Osteomyelitis of tibia. X-ray shows osteomyelitis of middle 3rd of tibia of long standing with considerable callus formation at site of earlier currettement.	A. P. N. treatment Mar. 21-Apr. 24, 1923.	Improved. Patient has not reported to Clinic since.	Thorek
E. L.	.....	652	44	F.	Fracture 4 years ago.	Chronic osteomyelitis following fracture. X-ray shows small area of infection at site of old fracture. One sinus exuding small amount of thin pus. Area about 2 inches square, trophic in appearance.	A. P. N. treatment May 8-Aug. 26, 1924.	Sinus healed. Examined Sept. 19 and Oct. 16, 1924. No recurrent symptoms.	Thorek
W. S.	.....	654	36	M.	Operated on by Dr. Kreuscher at Bremmerman Hospital, Chicago, in 1921; treated with A. P. N. at that time and healed. Later sustained an injury by a fall, developing abscess.	Osteomyelitis of lower 3rd of right femur. X-ray shows small focus of activity at site of previous operation.	A. P. N. treatment Nov. 5, 1922, continued for 2 weeks and left for home in Mexico, where he has continued treatment.	X-ray made Oct., 1924, shows bone defect almost obliterated.	Thorek

A. S.	.....	655	32	F.	Patient dates condition back about 2 years when she was passenger in a taxi collision.	Osteomyelitis of lower 3rd of tibia. X-ray shows erosion of outer border of tibia just above ankle. Small sinus in center of ulcerated area exuding scrous fluid. Right arm still has pieces of glass in it, visualized under x-ray.	A. P. N. treatment Mar. 8-May 6, 1923.	Nov. 19, 1923, and Oct. 8, 1924, no recurrence. Healed.	Thorek
S. T.	21103	667	56	M.	.....	Luetic osteomyelitis of left tibia. X-ray shows cavity in anterior aspect of leg about 6 inches above ankle, extending $\frac{3}{4}$ of way through tibia. Entered hospital for treatment when condition became acute, May 25, 1924.	Operated twice by Dr. Thorek for removal of sequestra. A. P. N. treatment May 27-July 20, 1924.	Patient did not tolerate antiluetic treatment. Died July 30, 1924, of intestinal complications.	Thorek
C. W.	.....	645	29	M.	Cut finger with piece of wire while building scenery. Infection followed; has been treated for past four weeks by Medical Department of Zurich Casualty Co. When amputation of thumb was proposed, patient came to American Hospital for treatment to obviate amputation if possible.	Osteomyelitis of thumb. Thumb about twice its normal size with edema extending into hand and pain radiating up to shoulder. End of thumb open and terminal phalanx visible. X-ray shows terminal phalanx necrosed and process extending to second.	A. P. N. treatment started Aug. 28, 1924, still under treatment.	Thumb getting progressively smaller. X-ray examinations show regeneration of affected osseous structures. Case improving rapidly; no pain or edema. Patient has returned to work. Cured.	Thorek
W. N.	20383	644	30	M.	Patient describes troubles in knee since 9 years of age with periods of invalidism up to 1921, since which time he has been continuously on crutches, unable to bear weight on left foot.	Osteomyelitis of left knee. X-ray shows typical osteitis of left knee joint with evidence of involvement of all joint structures. Knee swollen and painful to touch.	A. P. N. treatment begun Apr. 28, 1924. Corrected position of leg under gas, July 11, 1924. Treatment continued to Sept. 2, 1924.	Left hospital Sept. 7, 1924, able to walk without crutches, but advised to use same for about 2 months more. Letter dated Oct. 18, 1924, advises that "all conditions continue favorably."	Thorek
H. S.	20286	642	34	M.	Was German soldier injured by shrapnel fragments July 21, 1918; 4 operations in Germany from July, 1918, to Oct., 1920, for removal of fragments. All intervening time spent in German hospitals.	Osteomyelitis of upper 3rd of femur. X-ray shows 3 large foreign bodies (shrapnel) in thigh with active osteomyelitis in upper 3rd of femur. Acute pain in upper portion of left thigh.	Operated under fluoroscope by Dr. Thorek April 24, 1924, 2 fragments removed and large abscess within area of Scarpa's triangle, evacuated. Drainage provided. A. P. N. treatment May 27-Oct. 3, 1924.	All sinuses healed; no symptomatology. Left hospital walking with cane, Oct. 18, 1924. Returned for examination Nov. 1, 1924, stating that he was sailing for Germany next week. Cured.	Thorek
M. B.	21317	728	47	F.	Pain and swelling in region of lower left jaw extending down into neck. Treated as inflammation of maxillary gland and when fluctuation appeared, incised, supuration found; swelling and pain continued; pus noted exuding around 2nd and 3rd molars, which were extracted at once. No x-rays had been made up to this time.	X-ray shows active osteomyelitis of lower left maxilla, apparently secondary to apical infection of one of lower left molars, evidence of sequestration. Smears and cultures show mixed infection, streptococcus pyogenes predominating.	A. P. N. treatment begun July 25, 1924.	Pain subsided and condition consistently improved to Aug. 5, 1924, when patient left hospital, becoming an ambulatory clinic case. Discharged Oct. 8, 1924, with sinuses healed. X-ray shows progressive regeneration of maxillary defect, involucrum extending entire length of lower border. X-ray Oct. 21, 1924, shows continued regeneration. No recurrence. Cured.	Thorek
J. L.	21280	712	19	F.	.....	Chronic appendicitis; also osteomyelitis of amputated stump of right tibia. X-ray shows active infection of shaft of tibia at site of amputation. Sinus discharging small amount of pus.	A. P. N. treatment July 22, 1924. Appendectomy by Dr. Thorek, Aug. 9, 1924.	Sinus healed Aug. 6, 1924. Patient discharged from hospital Sept. 2, 1924.	Thorek
T. S.	19753	611	19	M.	Patient sustained compound fracture of left tibia and fibula in motor cycle accident, June, 1921. Reduced and splinted at American Hospital, and left after 7 weeks. Advised to use crutches at this time but disregarded advice.	Osteomyelitis of left tibia. X-ray shows partial union with area of non-union, probably due to low grade infection. Physical examination shows marked angular deformity at site of former fracture.	Operated Feb. 26, 1924, by Dr. Thorek, refracturing tibia and fibula and aligning with bone plate. A. P. N. treatment Mar. 2-June 16, 1924.	Incision healed. Union good.	Thorek

M. S.	.....	609	34	F.	Condition has existed uninterruptedly for 21 years following fall when about 13 years old. No operation. Suppuration throughout 21 years.	Osteomyelitis of right femur. X-ray shows osteomyelitic focus extending throughout lower half of right femur.	A. P. N. treatment Sept. 19, 1923. Still under treatment supervised by Dr. Weiss.	X-ray shows bone condition substantially regenerated. Improved.	Weiss
M. Q.	.....	619	36	F.	History of 2 years standing following a fall down 4 steps. No operative interference. No sinus.	Osteomyelitis of knee. X-ray shows osteomyelitic focus involving lower end of femur apparently extracapsular.	A. P. N. treatment June 13, 1923.	Did not return to Dr. Nicolson after July 23, 1923. No further record. Result negative.	Nicolson
W. D.	15593	707	52	M.	Injured Nov. 25, 1921, by falling in attempt to board street car, sustaining comminuted fracture of upper 3rd of right tibia. Taken to Mercy Hospital, Chicago, where cast was applied. Left hospital 10 weeks later. About 4 weeks after leaving hospital suppuration appeared and has continued ever since.	Osteomyelitis of right tibia (traumatic). Came to American Hospital Mar. 12, 1923. Right leg very much swollen, has 4 large ulcers covering entire anterior surface of upper half of leg below knee; 2 suppurating sinuses. X-ray shows active infection at site of former fracture.	A. P. N. treatment Mar. 12-Apr. 24, 1923.	Sinuses and ulcerated areas healed. Examined Apr., 1924, no recurrence. Cured.	Thorek
E. E.	19517	709	51	M.	Original infection occurred at 12 years of age (39 years ago); has been periodically recurrent since that time; last recurrence 13 months ago, since then suppuration has been continuous; 4 operations in St. Louis hospitals.	Chronic osteomyelitis of right femur. X-ray shows lower 3rd of femur affected with attempt at involucrum formation.	A. P. N. treatment Jan. 31-Feb. 13, 1924. Continued treatment at home after leaving hospital.	Pain relieved.	Thorek
M. L.	.....	713	53	F.	Crushed thumb under dumb waiter.	Osteomyelitis of thumb. X-ray shows extensive osteomyelitis of 2nd and 3rd phalanges of thumb. Hand swollen and exuding large amount of pus and serum from incisions made by P. G. men.	A. P. N. treatment Apr. 21-May 27, 1923.	Wound healed has about one-half motion of thumb.	Thorek
R. J.	.....	695	30	M.	Four previous operations at other hospitals.	Osteomyelitis of left humerus. X-ray shows active osteomyelitis of entire length of left humerus. Physical examination shows infiltration of arms and shoulder extending below elbow and well over left shoulder and chest. Unable to raise left arm. No sinus.	A. P. N. treatment Sept. 14-Dec. 2, 1923.	Has full use of arm. Calls every month. No recurrence.	Thorek
O. T.	.....	615	48	M.	Blow on jaw two months previously.	Osteomyelitis of maxilla. Fracture caused by previous blow. Sinus draining inside of mouth, infiltrated; able to open mouth about one-half inch; 2nd and 3rd molars on right side extracted by Dr. Pfister.	A. P. N. treatment May 26-June 18, 1923.	Sinus healed. Full opening of jaws. No recurrence.	Thorek and Pfister
K. S.	.....	607	39	F.	Two previous curettements at other hospitals without results.	Osteomyelitis of lower third of right femur. X-ray shows considerable callus formation and active area on posterior aspect immediately above epiphyseal line. Tissues above knee indicated with small sinus exuding small amount of semipurulent fluid; motion of knee limited to about 90°.	A. P. N. treatment May 15, 1923-Aug. 22, 1924.	Sinus healed. Full motion of knee.	Thorek

The studies in the cases herein reported permit the following conclusions:

1. The aluminum-potassium-nitrate compound, properly used, possesses remarkable properties in combating chronic infective suppurative processes.

2. This compound is not an antiseptic. On the other hand, it is a definite accelerator of bacterial growth, tending by rapid propagation to lower the virulence and viability of the infecting organisms, thereby assisting the normal resisting powers of the body to recuperate and thoroughly eliminate the increased exudation and transudation.

3. Unlike most antiseptics used in surgical practice, aluminum-potassium-nitrate compound does not affect and devitalize normal tissues and does not interfere with the processes of granulation, epidermization or the osteo-genetic efforts of nature.

4. Pain, which in most cases is the result of infiltration and consequent tension, is very quickly, and in some cases in a most surprisingly short time, relieved, due to prompt autolysis, liquefaction and discharge thereby, relieving tension followed by absorption and elimination through sinus and usual emunctories.

5. Aluminum-potassium-nitrate is non-toxic; the method of application is very simple. It may be used within wide limits and has no damaging subsequent effects. Removal of sequestra is in all cases advisable before application of the compound.

6. In the author's last series of one hundred and sixteen cases, herein described, over 75 per cent. became ambulatory and able to pursue their vocations, coming only to the clinic for dressings, in contrast to the radical surgical procedures of the past, thus eliminating long hospitalization and later invalidism with its attendant expenses and discomforts.

7. If used judiciously, this treatment will be a great aid to the surgeon as a pre- as well as post-operative addition to his therapeutic armamentarium.

8. This method will not entirely replace standard surgical procedures in all cases.

9. It appears that this treatment proves most efficacious in cases that have persistently been treated by surgical and other measures with futile results.

10. Careful scrutiny in the selection of cases

and frequent combination of sound surgical procedures with the treatment herein described will often give gratifying results.

11. Potassium nitrate used alone is not attended by the good results seen from the use of the combined salt and is often a dangerous irritant.

12. The aluminum nitrate is thus far found best in combination with potassium. Further research to enhance, if possible, the action of the compound is at present in progress.

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DIAGNOSIS AND TREATMENT OF GALL-BLADDER DISEASE—MEDICAL ASPECTS*

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General Considerations—In the majority of cases of gall-stones or of other diseases of the gall-bladder, the symptoms are so typical that the diagnosis is easily made. In some instances, on the other hand, the history and the physical findings are so typical that it is very difficult to arrive at a definite conclusion. In these cases, in order to establish the diagnosis, it may be necessary to observe the patient over a long period of time, and to make extensive laboratory and x-ray investigations.

In cases of gall-bladder disease, a careful history is of prime importance. The age, sex and occupation of the individual should be carefully considered, and it is also important to secure a detailed chronological account of the patient's symptoms. It is important to inquire whether or not there have been attacks of acute indigestion or of so-called "ptomaine" poisoning, and in particular whether or not these attacks have been followed by jaundice. The incidence of gall-stones is most frequent after the age of 40; they occur more frequently in the female sex and in individuals whose occupation is of a sedentary character. Other predisposing factors are pregnancy and obesity. It is very interesting to note how frequently the first attack of gall-stone colic

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occurs either during pregnancy or a short time after parturition. Typhoid fever also is a predisposing factor in the causation of gall-stones. Barker has reported one case in which cultures of typhoid bacilli were obtained from the central portion of a gall-stone removed at operation thirty-seven years after an attack of typhoid fever.

The physical examination should include not only an investigation of the abdomen, but also a complete general and neurological examination, the latter being particularly important in order to exclude those cases of gastric crises which are so often mistaken for gall-bladder disease. In examining the abdomen, it is important first to palpate very lightly in order to determine slight differences in resistance, especially in the upper portion of the rectus muscle on the right side. Deep pressure should then be made, pressing rather firmly over the region of the gall-bladder and pressing the fingers upward beneath the ribs while the patient takes a deep inspiration. At the same time the opposite hand should exert pressure posteriorly in the right costo-vertebral angle. The vertical percussion method of Murphy may also be useful, and in some instances definite tenderness can be elicited by sudden pressure over the ribs in the region of the gall-bladder, or by striking the upper portion of the rectus muscle with the ulnar portion of the hand and comparing the sensations which the patient experiences with those produced by a similar act on the opposite side. After an attack of pain in the upper abdomen the urine should always be examined for bile pigment.

An x-ray examination of the gastro-intestinal tract should be made for the purpose of excluding the presence of an ulcer of the stomach or duodenum. At the present time the roentgenologist is able to demonstrate gall-stones in from 40 to 50 per cent. of the cases in which they are later found at operation. The proportion of correct diagnoses from the x-ray films depends in large measure, of course, upon the technical skill of the roentgenologist and upon his experience in the interpretation of the films. Indirect evidence of disease of the gall-bladder may also be shown on the roentgenograms. Thus an enlarged gall-bladder may produce an indentation of the shadows of the duodenum or the duodenum may be displaced upwards to the right, as the result of adhesions between the pyloric end of the stomach

and the gall-bladder itself. It is sometimes possible, also, to demonstrate adhesions between the colon and the gall-bladder. A method of visualization of the gall-bladder by means of the intravenous injection of tetrabromophenolphthalein has been described recently by Graham. It is too early as yet to determine the value of this method in the diagnosis of gall-bladder disease.

It has been mentioned by many observers, notably by Kerr, that among individuals who have gall-stones only one in twenty complain of symptoms. These statistics are based upon autopsy findings and it is very probable that in many of the cases in which gall-stones have been found at autopsy the physician who took the history made no attempt to elicit symptoms of gall-stones, for it is very doubtful if many individuals who have gall-stones go through life without having some very definite symptoms. In fact, I think one might say that "innocent gall-stones" are a myth. Many patients with so-called "innocent gall-stones" complain of a group of symptoms which may be classified under the heading of gall-bladder dyspepsia. These patients complain of more or less fullness in the epigastrium, sometimes of the belching of sour material and of a sensation of distress or hunger two or three hours after meals. They may have attacks of slight fever accompanied by jaundice and in some cases are distressed by a sensation of chilliness. At other times they may have more or less nausea or vomiting. If these patients are examined carefully from time to time, definite tenderness can be made out in the region of the gall-bladder, and sometimes bile pigment may be found in the urine. It is in these indefinite cases of gall-bladder dyspepsia that the x-ray may often disclose the cause of the trouble. It is obvious, however, from the general symptoms of the so-called "gall-bladder dyspepsia" that it is often difficult to distinguish the cases in which the symptoms are really due to gall-bladder disease from those in which they are caused by duodenal ulcer or by chronic appendicitis or by chronic colitis. It is in these cases that prolonged observation and thoughtful study of the patient are often essential in order to clear up the diagnosis. The symptoms of gall-bladder disease may be simulated by ptosis of the stomach or intestines. In some cases in which the ptosis causes an actual kinking of the

cystic or common duct, the difficulty of establishing the primary cause of the symptoms is especially difficult.

Biliary Colic: In cases of gall-stone colic the pain is felt, as a rule, in the epigastrium, somewhat to the right of the median line or directly over the gall-bladder. It is often referred downward toward the umbilicus and sometimes to the back, to the right shoulder or even to the neck. The pain is severe and knife-like in character and is usually so intense that the patient calls for immediate relief. There are cases, however, in which the pain is not felt in the so-called gall-bladder area, but as in some cases that I have recently seen, may be referred to the left side. In these cases, after the attack of gall-stone colic has passed, the area of tenderness of the skin may be definitely located in the left hypochondrium and pressure over the gall-bladder may elicit pain on the left side. In the ordinary cases of gall-bladder colic, the pain passes off after a few hours, especially if a sedative has been given, but for the next two or three days there is more or less tenderness in the right hypochondrium. There may also be hyperesthesia of the skin over the region of the gall-bladder with a so-called head-zone of cutaneous hyperesthesia. Occasionally the pain is referred upward to the chest so as to simulate an attack of angina pectoris. I have seen a number of instances of this kind, in which at the time of the attack it was almost impossible to differentiate between gall-stone colic and angina pectoris. In cases of angina, however, the history shows that the pain was brought on by exertion or that the patient was previously short of breath on exertion and there may also be evidence of arterial and myocardial degeneration.

DIFFERENTIAL DIAGNOSIS

In establishing the differential diagnosis of biliary colic the following conditions must be considered:

1. Renal colic with Dietl's crisis; and pyelitis.
2. Acute pancreatitis.
3. Diaphragmatic pleurisy.
4. Angina pectoris.
5. Abdominal angina associated with abdominal arteriosclerosis.
6. Pericarditis.
7. Epigastric hernia.
8. Lead colic.

9. Herpes zoster.

10. The gastric crises of tabes.

Renal Colic: In renal colic the pain is first felt in the lumbar region and is referred downward along the line of the ureter to the testicle on the right side, sometimes to the end of the penis, or to the upper portion of the thigh, following the distribution of the ileo inguinal nerve. It is extremely severe and if the urine is examined shortly after an attack, red blood cells are nearly always to be found. In cases of Dietl's crisis the location and distribution of the pain is the same as in renal colic and is caused by the kinking of the ureter with resultant hydro-nephrosis. The same also is true of the pain in pyelitis. In the majority of patients, however, the latter condition is associated with a high temperature and with irritability of the bladder.

Acute Pancreatitis: Acute pancreatitis gives rise to very severe pain in the upper portion of the abdomen, but is not referred to the same areas as either renal or biliary colic. It is associated with very severe nausea and vomiting, and with a temperature which rapidly rises to 103 or 104. The patient is extremely ill and very soon shows evidences of collapse, with pallor and a rapid, thready pulse. These cases usually run a rapidly fatal course, the patient dying within two or three days. The disease is associated with jaundice because the swelling of the pancreas causes compression of the bile duct. In a large proportion of the cases of acute pancreatitis an operation is performed, the surgeon thinking that he is dealing with some acute condition of the gall-bladder. The principal points of differentiation are the severity of the symptoms and the high temperature, which are usually much more marked than in cases of acute cholecystitis.

Diaphragmatic Pleurisy: The pain in diaphragmatic pleurisy is often referred to the upper abdomen. It is increased upon taking a deep inspiration, and the examination of the chest will often reveal a friction rub along the line of the attachment of the diaphragm. As in gall-stone colic, the pain is often referred to the right shoulder or to the neck. However, in the diaphragmatic pleurisy pressure over the lower portion of the chest or the upper portion of the abdomen usually gives relief, in contrast to acute cholecystitis, in which pressure intensifies the pain. Diaphragmatic pleurisy is often associated with pneumonia, so that areas of consolidation may be

found at the base of the lungs on the affected side. Moreover, in diaphragmatic pleurisy the temperature usually rises rapidly and there is a marked leucocytosis.

Angina Pectoris: Abdominal Angina: As mentioned above, it is often very difficult to distinguish certain cases of angina from gall-stone colic. This is particularly true of cases of so-called "angina abdominalis" associated with arteriosclerosis of the abdominal vessels. It is true that in many cases of angina the pain is referred to the epigastrium, but angina may be differentiated from biliary colic by the fact that the patient presents a history of symptoms which suggest cardiac disease—such as shortness of breath on exertion, in particular. In most cases of angina the pain is referred down the arms and the sensitive areas of the skin which are afterward found, are in the region of the precordium rather than in the epigastric region. Even with these points of differentiation, however, it is not always easy to decide which condition is present, and a great many patients have been doomed to invalidism or have been given a serious prognosis, under the assumption that angina was present, when an operation for the removal of gall-stones would have cleared up all of the symptoms. In every doubtful case of angina, therefore, it is important to examine the urine carefully after an attack to see whether or not bile pigment is present. In the majority of cases it is important also to make a careful x-ray study of the gastro-intestinal tract—including the gall-bladder, in order to exclude the possibility of gall-stones.

Pericarditis: I have seen cases of acute pericarditis in which the pain was referred downward to the epigastrium, and definite tenderness was felt over the gall-bladder. However, in examining the hearts of these patients, a definite pericardial friction rub can nearly always be made out in the second and third interspaces to the left of the sternum. Furthermore, in every case of pericarditis there is more or less difficulty in breathing; the patient is more comfortable propped up with pillows, he nearly always shows a temperature ranging between 101 and 103 and in many instances there are signs of dilatation of the heart. Furthermore, in the majority of cases of pericarditis there is a history of previous attacks of rheumatism or there is evidence of a co-existent rheumatic arthritis.

Epigastric Hernia: In cases of acute and

chronic pain in the upper abdomen, it is always important to consider the possibility that it may be caused by epigastric hernia. Epigastric hernia usually occurs slightly to one side of the middle line, at the point where the blood-vessels emerge through the rectus muscle. The hernia is often very tender, and can be quite readily reduced, the reduction of the larger hernia often producing a sound like that of splashing water. Sometimes injury causes it to become very much inflamed so that operation becomes necessary. At other times it may become incarcerated and produce very severe pain. The symptoms due to epigastric hernia are very similar to the ordinary symptoms of gastric hyperacidity. The pain is nearly always aggravated by the patient's bending backward. I have seen a number of these patients who have been operated upon for appendicitis or for gall-bladder disease, the true condition not being discovered.

Lead Colic: Lead colic often produces very severe pain—particularly in the upper abdomen, so that the condition is sometimes mistaken for gall-stones. A history of an occupation involving exposure to lead; the observation of the so-called "lead line" on the gums; the presence of anemia associated with basophilic stippling of the red cells and occasionally nucleated red corpuscles will all help to establish the correct diagnosis.

Herpes Zoster: Recently I saw a case in which the patient was advised to have an operation for gall-stones because of the severe pain in the upper right side of the abdomen, from which he had been suffering for two days—pain so severe that he had to be given morphin; but on the third day a very definite eruption of herpes zoster manifested itself. The pain in herpes zoster is, of course, not as severe as in cases of gall-stone colic, and yet it may be so troublesome that the patient demands sedatives for relief. It would appear important, therefore, in cases of localized pain in the upper portion of the abdomen, particularly if the pain occurs in the back as well as in front to consider the possibility of herpes zoster.

Gastric Crises of Tabes: Everybody has seen many cases of tabes associated with very severe pain in the upper part of the abdomen, with nausea and severe vomiting, these symptoms almost compelling him to believe that he is dealing with a case of gall-stone colic. It is for this reason that at the outset I urged the importance of

a complete neurological examination in all doubtful cases. The finding of fixed pupils, inactive to light—with irregular margins and very often eccentrically placed, the absence of knee jerks, the presence of the Romberg sign, the characteristic findings in the spinal fluid and positive Wassermann: all of these features will serve to differentiate the gastric crises of tabes from an acute gall-bladder disease.

There is another group of cases which may give rise to difficulty in establishing the differential diagnosis, and that is those cases in which the gall-stone has become lodged in the common bile duct, in the ampulla of Vater. These patients will have chills, fever and intermittent jaundice, so-called Charcot's hepatic intermittent fever. I have seen such cases in which the diagnosis of malaria has been made; and others in which the diagnosis of septic endocarditis was made, because of the persistence of the chills and fever and the presence of intermittent jaundice. It is important to bear this possibility in mind. The patient, however, will nearly always give the history of gall-stone colic associated with jaundice previous to the development of the chills and fever. If this possibility is kept in mind, there is usually very little difficulty in establishing the diagnosis. In malaria and in septic endocarditis, although the patient may be sallow and have a slight yellow tinge, he never has the deep jaundice which is characteristic of certain periods in which the gall-stone is impacted in the common bile duct.

TREATMENT

Surgical Treatment: In discussing the treatment of diseases of the gall-bladder I shall not discuss at length the differentiation between conditions which require surgical treatment and those in which medical treatment is indicated. Briefly it may be stated that the indications for surgical operation in diseases of the gall-bladder are:

1. Acute suppurative cholecystitis.
2. Perforation of the gall-bladder.
3. Chronic distention of the gall-bladder (so-called "hydrops," such as occurs in cases in which the cystic duct is blocked by gall-stones).
4. Obstruction of the common duct from stone—particularly in cases of Charcot's hepatic intermittent fever.

5. Persistent dyspepsia, with signs of gall-bladder disease unrelieved by medical treatment.

6. Persistently recurring gall-stone colic.

In my opinion, surgical intervention is not indicated in the ordinary cases of acute catarrhal cholecystitis or the ordinary case of gall-stone colic, in which there has been only one or at most two attacks—not very severe. It is in the persistent cases that I feel that an operation is very necessary. It is important for the internist to recognize this, because if gall-stones are left untreated, or if a chronic cholecystitis is allowed to go on too long, many complications occur which may mean chronic invalidism later. In cases of persistent gall-bladder disease, associated with gall-stones, if no treatment is given, secondary changes may take place in the liver and in the pancreas, so that even after operation is performed convalescence is very slow and often very unsatisfactory. Unfortunately, operations for diseases of the gall-bladder have not yet reached such a state of perfection that cures are obtained in every case. I think that one can safely say that twenty-five per cent. of gall-bladder operations give more or less unsatisfactory results. In some cases the patient may complain of the same gastric or other symptoms that he had before operation, while in other instances definite adhesions may form about the site of the operation so that the patient will have recurring attacks of pain, associated with slight jaundice and distress in the region of the gall-bladder. Sometimes, too, these attacks are accompanied by fever. In other instances, failure is due to injury of the duct at the time of operation, or it may be that all of the gall-stones were not removed so that later a small stone may cause obstruction of the common duct. After a cholecystectomy the common duct dilates very rapidly, so that in the course of two or four weeks it may be found to have enlarged to four or five times its normal size. The question naturally occurs whether in this dilated duct gall-stones are much more likely to form than they were in the normal duct. I do not believe that this is the case for the reason that concentration of bile does not occur in the dilated duct.

Treatment of Acute Catarrhal Cholecystitis: Acute catarrhal cholecystitis is not uncommonly seen in cases of infection—being particularly associated with typhoid fever. Operation is very seldom necessary in these cases. In the ordi-

nary cases of acute catarrhal cholecystitis the patient should be placed on a very restricted diet—consisting largely of skim-milk, cereals and fruit juices. Continuous hot applications are essential for the comfort of the patient. If the pain is severe, codein, or even morphin, may be given for its relief. If vomiting is persistent all food should be withdrawn and an alkaline water should be given freely. The vomiting is sometimes relieved by giving the patient from three to five drops of chloroform with shaved ice. This may be repeated every two or three hours. The pain and temperature usually subside in from two to three days, when the diet can be gradually increased, toast, rice, custard, baked potato and other easily digested foods being added. One naturally questions in these cases whether or not hexamethylenamin should be given. Personally, I do not believe that this is of any particular value, because it is not excreted into the bile.

Operation is not necessary unless the gall-bladder becomes very much distended or unless there are signs of suppuration. If the patient has a steadily rising temperature and an increasing leucocyte count, however, it is very necessary to operate before rupture of the gall-bladder takes place. The danger of rupture of the gall-bladder is not as great as that of rupture of the appendix. However, such a condition can occur, and that possibility should always be kept in mind and the operation performed before it is too late. In these cases, as well as in cases of chronic cholecystitis, one questions whether gall-bladder drainage according to the Lyons method may not be indicated. Some have advised this quite strongly, but since the gall-bladder always empties itself periodically I do not believe that very much is gained by this treatment.

Treatment of Chronic Cholecystitis: Chronic cholecystitis is frequently associated with symptoms which suggest a hyperacidity of the stomach. It is important in these cases that the patient be kept on a very simple diet, avoiding all ordinarily indigestible foods, such as fried foods, excessive sweets, hot breads, pies and pastry, coarse vegetables—like cabbage, radishes, raw onions—and some meats, such as pork and veal. It is important that the patient eat three good meals a day and I would suggest that in addition he be given a glass of milk or a glass of half milk and half cream between meals and at bed-time. The majority of patients are bene-

fited by taking a tablespoonful of olive oil before each meal, as this lessens the tendency to hyperacidity. If the hyperacidity symptoms are very marked, it is wise to give the following alkaline powder two hours after each meal—sodium bicarbonate, ten grains, bismuth subnitrate, five grains, and heavy oxide of magnesia, five grains. If the patient is quite nervous it is also of advantage for him to take from fifteen to twenty grains of sodium bromide after each meal for a period of a week or ten days. Among the prescriptions which are advocated by different writers to be taken before each meal may be mentioned artificial Carlsbad water or some other alkaline water; twenty grains sodium bicarbonate and one dram of sodium phosphate; or ten grains of sodium salicylate and a dram of sodium phosphate. Some advise magnesium sulphate, two ounces, sodium salicylate and sodium bicarbonate, each five drams—one teaspoonful of this mixture to be taken in hot water each morning. It is very important that the patient should get plenty of rest, and if it can be arranged, he should lie down for from one to two hours each afternoon. He should take plenty of time at his meals and should chew his food thoroughly. It is important that he should stop the use of tobacco, or should use it very moderately.

There is no one thing that is so apt to disturb these patients as to take a heavy meal when they are feeling extremely tired. Therefore, if the patient returns from his work in the afternoon very tired, it is wise for him to lie down for a half hour or an hour in order to relax as much as possible before he eats his dinner.

TREATMENT OF GONORRHEA*

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CHICAGO

Gonorrhea as it stands today and has stood for ages is a sort of a nightmare. With all the agencies at work, good, bad and indifferent, attempting to check its ravages, it is still going full speed ahead. New cases are just as numerous as ever or even more so. The cures are just as disappointing as of old. Almost daily we are told of some new and wonderful method or specific that

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cannot miss fire and still we note the hordes of men suffering with old cases of gonorrhea with the same old time complications consulting first Dr. Tom, then Dr. Dick and finally Dr. Harry, all eminent urologists, and yet he sees the same old morning drop with its tell-tale diplococci and in despair he may take a flier to our ever alive and wide awake competitors, the osteopaths or chiropractors to have his spine readjusted in forlorn hopes that the days of miracles are still on earth.

These old buried gonococci are many times cared for by the undertaker, for they are slow in surrendering from their deeply fortified positions even to the effects of the embalming fluids. As matters stand, the treatment of gonorrhea has been truly inconsistent, haphazard and often times detrimental and unsatisfactory. Personally, I firmly believe that were there no doctors or drug stores and old Doctor Nature could have been given his full chance with his methods of cure there would be fewer gonorrheal tragedies. This does not say that much good has not been done, but the harm that has been inflicted possibly outweighs the good things, all facts considered.

Big claims have been made of the wonderful advances made in the Army during the recent great World's War in the matter of gonorrheal cures performed by new and better methods of treatment. Great big advertising clinics have resulted on the strength of this propaganda. This is pure "bunk." I was a surgeon during the war with Spain and also during the recent World's War and there were no new discoveries as far as gonorrhea was concerned. The armistice cured tens of thousands, or rather tens of thousands were given O. K.'s because we would have had a bigger standing army than Germany had before the War and that standing army would have stood for years had the rules not been flexed and relaxed to meet the emergency, as it were.

Regarding the so-called venereal clinics founded on the supposed army methods and claims, they are delusions and snares. If I had opened up such an establishment and scheme and flaunted my wares through the advertising pages of the daily press, I would have been disbarred from everything and summarily executed at sunrise long, long ago, but the names of wealthy and influential, well-meaning but misinformed and

misguided men who had mostly served in the World's War and had been made to believe that the venereal question had been largely disposed of and that gonorrheal treatment had been put on a new plane of effectiveness because of the army methods, gave their sanction to this commercial undertaking, misbranded with crocodile tears of pity for the human race by lending their names to this unethical advertising scheme. These blazing ads with the names of multimillionaires and men of big influence signed to them seem to throw the fear of God or a sort of paralysis into medical lorddom that as a rule are extremely active in discouraging such advertising schemes.

Some claims made by these advertisers are false. The one claim that they can absolutely cure gonorrhea is a flagrant example of their duplicity and still they go ahead with the old time-honored Valentine or Janet irrigations, creating tens of thousands of cases of posterior urethritis that never would have developed if these irrigations had been discontinued and discouraged.

Another unfortunate angle to this venereal clinic fiasco, and this includes clinics operated and controlled by state, city, public health and social hygiene services, is the fact that in their blinded enthusiasm, which is at white heat, they encourage the abuse of medical charity. Thousands of well-paid and prosperous patients crowd these clinics under the impression that they are to be given a superior brand of treatment. Thousands of people ordinarily too proud to accept this kind of charity are urged to do so under the impression that they are getting something far better than you or I can give them.

What are the honest facts about these so-called gonorrheal cures, the so-called clinics? The patients are put through the hurdles on the double quick, many times like cattle being hurried through the chutes, and their treatment is in a sense a joke and does not savor of the scientific, but to see how fast they can rush them through and how many they can handle at one session. I am knocking this clinic game for it needs to be knocked. Perhaps some paid employees of these places will give out rosy reports of the wonderful things accomplished to their superiors in order to make more secure their berths. They should realize that their gonorrheal results on the whole are not gratifying. The worst aspect of this abuse of medical charity is this: patients are

induced to go to these venereal clinics regardless of their financial ability because of the claims of superiority. They are rather loath at first to avail themselves of this golden opportunity but finally acquiesce and make their first appearance at the doors of charity. They then begin to realize that the abuse of medical charity means added money in their pockets. They have made their first start, as the girl does with her first cigarette or other indiscretion. The skids are greased for their future pilgrimages into the realm of medical charity. They go the limit. They only need a family doctor now in cases of midnight emergencies, which happen when the clinics have locked their doors for the night. This thing of clinics accepting and treating people well able to pay is a dirty imposition and an insult to the doctor who is trying to be ethical and fair. The clinics should be conducted as they were while I was a student and later an instructor at Northwestern University Medical School, where their financial ability was investigated and their treatment was stopped if they were found to be unworthy of charity. But today it is come one, come all, welcome to our city. The minute a man or woman able to pay for medical services accepts this clinic charity he loses his own self-respect. If any of these tauted clinics had a real antidote or cure for gonorrhea or any better or improved methods of treatment than you or I have, then it would be folly to condemn them in their present day tendencies, but they have not.

Would any reputable physician want to attempt to treat rabies in an inferior and ineffectual manner when we have these splendid institutions for the cure of these cases which we all realize are a God-send to humanity? Not in a thousand years. Doctors make every effort to see that patients with rabies go to the proper place for treatment without delay. It is about time that the organized medical profession was putting the limelight on these venereal clinics, more especially the advertising ones, and finding out the real facts instead of relying on hearsay regarding their supreme methods and marvelous cures.

There should be a rigid censorship on these free clinics to see that they confine their activities to those unfortunate and poor and not encourage the well-to-do to avail themselves of their free privileges.

We have run in the same old rut of treatment

for gonorrhea since I began to study medicine more than thirty years ago. It is the same old story. We lose sight of true pathology and fire away broadcast after broadcast thinking that our foes, the gonococci, are in or near the urethra proper just waiting for their rations of antiseptics that will forever annihilate them. These medications are shot and irrigations are forced. They sadly miss their mark, for there are thousands of crypts of Morgagni and glands of the Littre and other adnexia of the urethra, including Cowper's glands, and the prostatic glands that are the real hosts of the diplococci. In gonorrhea we have a complexity of pathology that must be analyzed and understood if we expect to secure a possible cure.

Why did I ask to read a paper on the treatment of gonorrhea? Do I believe I can help the present situation as it stands today? Yes, I do, or I would not impose on your time. There are three great factors that will materially help in our present day efforts to cure gonorrhea. The first is extreme gentleness at all times, handling the urethra and its appendages, as we would an eye. Worlds of harm have been done through needless traumatism in all stages of gonorrhea. The second point is to mop the urethra instead of using injections and irrigations, thereby preventing a very large percentage of posterior involvement. In chronic posterior urethritis it is essential to employ instillations gently instead of irrigations with all their dangerous possibilities. The third point is to use bland medication instead of the stronger irritating ones that can only do harm and spread infection to the deeper structures.

One point I have to come to realize is the extreme importance of gentleness and the avoidance of trauma. How many times have we passed sounds almost before an acute urethritis has subsided only to have the patient return with all his bad symptoms increased and the case worse than ever? How many times have we in our frantic efforts to cure up a few little harmless shreds traumatized the posterior urethra, creating new and worse conditions. The old adage regarding old gonorrheal pathology, "Better leave sleeping dogs alone," is very true. Do not try to do too much or you may do much injury. How many times in the efforts to cure up an old gonorrhea in a woman's cervix uteri have we accidentally in our haste traumatized the cervix with

our speculum in one way or another and the woman would shudder and say, "That hurt me, doctor," and in the next two or three days we realize that we have created an acute extension of the disease that we were trying to eradicate, with a resultant acute specific salpingitis with all its unfortunate and far-reaching results. The same is too often true when using too strong medical applications to the cervix. A 1 per cent. solution of silver nitrate is of service; a ten per cent. solution is a danger.

Handle the applicator very carefully and use it so as get real benefit. How often have we introduced a cystoscope or a deep urethroscope into a male urethra to be called some hours later to attend a case of urethral chills, so-called, which are always dangerous and bad. Let us spread the propaganda of reform and let the keynote be gentleness.

The second point I wish to suggest is that we mop out the anterior urethra instead of using irrigations and injections. Some three or four years ago I realized that I was getting too many cases of posterior urethritis, in fact, 70 per cent. I decided to try and use a mop, as it were, in the anterior urethra, especially in new or acute cases of urethritis. I can truthfully say my results have been more than gratifying. The old time-honored but abused silver nitrate in weak solution, say 1-500, is my sheet anchor, although I vary it with one per cent. mercurochrome at times. I take one of the peerless wood applicators, wrap a small piece of cotton around one end, always testing the stick to see that it is perfectly smooth and freely pliable to be sure that it will not break in the urethra, as I do the mopping. Then I dip the applicator in a solution, holding the glans penis between my fingers, and introduce the medicine way back to the cut-off muscle, using a sort of a screwing or rotary motion to make the mopping as thorough as possible. Then I remove the stick, using a turning movement while taking it out. Then I take a liberal piece of plain gauze, fold it and tie it on the glans proper with a piece of one inch gauze bandage with a slipknot, so the patient can easily remove same. This protects the clothing from medication and secretion. Pledgets of cotton should never be used. They simply become saturated and seal up the meatus and the retained pus creates bad irritating conditions. Gonorrheal bags are filthy and undesirable.

In treating chronic posterior urethritis I employ weak silver nitrate solution, $\frac{1}{4}$ per cent., using an Oliver deep urethral instillation syringe with a Porges catheter made to fit the size of about a 10 F. as a rule.

The third point I wish to emphasize is bland medication. Use weak solutions of everything that is irritating. There have been perhaps thousands of specifics used for the care of gonorrhea, both acute and chronic. They are mostly of no use and very often distinctly deleterious. Irrigations are generally bad, no matter what chemical is employed. Injections as ordinarily employed are very questionable. Medicated bougies and suppositories of all sorts and descriptions are bad. Any foreign body left in situ in the urethra creates troubles. All serums and vaccines are bunk and bad. Millions of dollars have been spent for these experiments that should have been discarded to the junk pile long ago. The latest suggested method is intravenous injection of 3 to 5 cc. of 1 per cent. mercurochrome solution every second day. This bears careful trial because there may be something worth while in this therapy. In the clinics given at the Chicago Medical School Dr. Zaczek has been using this method with apparently good results. It is too early to make definite claims as yet. The new heat methods, such as diathermy, are still in the experimental stage and probably have their limitations. The thermaphore treatment, which is simply heat applied directly to the urethral mucosa through a steel sound, is ordinarily good therapy, in selected cases. Galvanism in all its forms is bad and dangerous. Some internal medications are extremely harmful. Hexamethylenamin should never be employed. It is a distinct irritant to the mucous surfaces and makes bad matters worse. Cubebs and copabia and all their combinations are not good and create gastric disturbances not desired. Methylene blue is a joke. East Indian sandalwood oil is of value in acute and especially peri-acute conditions, but it must be administered guardedly. I always combine it with alkalines to prevent gastritis and nephritis so far as this is possible. Alkalines alone are always indicated and do good, especially the citrates and tartrates. I very often give one-half ounce of the old mixture of rhubarb and soda four times daily. This gives a good laxative and alkaline effect and is pleasing to administer.

Many things that we do in cases of gonorrhea are overdone and do harm if abused. The urethroscope in both anterior and posterior urethra has only a limited practical value. Many a patient seeing a urologist put a bright light down into his deep urethra believes the millenium has arrived because the doctor sees it all. If he only knew how little of the real pathology is to be seen he would change his mind. The doctor can only see the urethra proper. All the adnexa, wherein lies 90 per cent. of the trouble, is not to be seen. How could a urethroscope see Cowper's gland or other such adnexa? Besides, there is always more or less trauma produced every time the urethroscope is introduced. It has its real usefulness in such cases as persistent bleeding ulcers of the urethra, but its use should be limited to its indications.

Another bad angle is the abuse of prostatic massage so-called. There are physicians who virtually massage as a routine without considering the true pathology or indications. It is their stock in trade, as it were. They find the prostate a little off color or a lot wrong in many cases and proceed to rub and tug, attempting to do something, but unfortunately that something done is too often bad and distinctly harmful. How many patients come to me and on getting on my table for examination turn around and expose the rectum, expecting the usual so-called massage. I often wonder if perversion might not be a product of this rub-rub-stuff. Prostatic massage has its indications and also its limitations, and I only hope physicians who have been saturated with this massage mania will come to earth and think it over again.

Regarding chronic gonorrhea and its complications, chronic infections of the lacuna magna should be treated by the cautery needle clear up to the bottom. Other treatments are usually failures. Infections of the glands of Littre and the crypts of Morgagni should be treated by mopping with a solution of silver nitrate $\frac{1}{4}$ per cent. every second day. Peri urethral abscess should be allowed to get ripe, as it were, and then be opened by incision, using a sharp pointed scissors on the outside of the penis. I have never had a resulting urinary fistula develop if I waited until the abscess was well walled off. Strictures of the meatus should be handled carefully. To incise and make too much of an opening is a bad mistake. Only a small incision

should be made in the floor of the canal. Too much of a cut creates bad conditions, such as dribbling of urine and loss of tonicity of the usual stream desired, expected and necessary for the well-being of the patient.

Soft urethral strictures in the shaft of the penis can be treated by the use of sounds, either hard rubber or steel. Hard rubber bougies such as we get now days are excellent and avoid the trauma we get in going through the membranous urethra, which is a fixed affair and cannot be forced. For a hard fibrous stricture do a urethrotomy. In the anterior urethra do an internal urethrotomy, cutting the strictured mass and making the incision on the roof of the canals for the purpose of avoiding too much hemorrhage. Always get a coagulation test before doing this operation. Do not make an incision over a 30 to 35F. That will do the work and lessen the chances of excessive hemorrhage, curvature of the penis and other undesirable complications. Do not put a sound in the penis for five days after the operation and then with extreme gentleness.

For the old time hard strictures in the membranous urethra perform an external urethrotomy, doing it thoroughly. These results are splendid, but sounds must be passed once a week practically for years to come.

Infections of Cowper's glands are frequent. They seldom suppurate and can be treated expectantly by hot local applications, after which they subside and become quiescent. Acute exacerbations of these inflammations of these glands produce very high temperature at times, with temporary alarming symptoms that rapidly subside.

Urethral ulcerations, if hemorrhage persists over several days, should be treated by the urethroscope and 20 per cent. silver nitrate at the point of bleeding. Acute retention of urine due to either spasmodic or organic strictures is relieved if simple measures fail by inserting a small filiform or bougie into the urinary bladder, leaving it in situ for one hour and then removing it with the patient standing with a bowl of running water ready to receive the urine which is usually forthcoming. If an over-distended bladder is catheterized either by suprapubic puncture of catheter through the urethra, the urine should be withdrawn very slowly, allowing a certain amount to remain in the bladder. Sudden complete evacuation of an over-distended bladder

is too often followed by dangerous complications, such as hemorrhage, etc. Prostatic abscess, either extracapsular or intracapsular, is in a sense a nightmare and is extremely difficult of early diagnosis. Hot local applications by means of the hot water bag rather than the so-called sitz baths are preferable, as the latter, while valuable, weaken the patient, thereby lowering his general tone. These prostatic abscesses will at times spontaneously rupture into the urethra, thereby saving us a lot of trouble. If they increase and the terrible chills that are pathognomonic of this class of cases continue, then it is very necessary to incise through the median line two and one-half inches in front of the rectum, allowing the pus to drain out if it is to be found. Drainage in these cases, even though we fail to find pus, will oftentimes be of help.

Chronic gonorrhea in the female is usually located in the Nabothian glands of the cervix. Careful mopping out of the cervix with 1 per cent. solution of silver nitrate, going up as far as can be gently performed, is the best treatment. In doing a hysterectomy the cervix should be completely removed with the uterus, for an old infected left over cervix is a Jonah and a mistake.

Treatment of specific urethritis in the female is accomplished by intra-urethral applications and instillations of silver nitrate. I do not believe that one case out of fifty of gonorrhea contracted from the female is from the Bartholin glands or the urethra. It is the old tenacious mucus coming from the cervix uteri that is the true sinner. A hot douche daily of quinine bisulphate, one teaspoonful to two quarts of hot water, is very serviceable. If the labiae are inflamed or swollen a little piece of absorbent gauze placed between the lips and left in situ will often be of great value. The same is very true of pruritus ani. Tampons of all sorts and descriptions have been used from time immemorial, saturated with ichthyol, glycerine and what not. They are in my opinion deleterious, no good and contra-indicated.

As to gonorrheal seminal vesiculitis which is responsible for many terrible results and complications, we must thank Dr. Belfield for his vasotomy operation and technic which is well known to all, for relief in at least a large percentage of these unfortunates. Recently Dr. Lowsley of New York has perfected his technic

so that he catheterizes the ejaculatory ducts through the sinus pocularis, thereby inserting the medication into the vesicles without any incision. This is a real advance in genito-urinary work. Dr. Eugene Fuller was the pioneer in the field of seminal vesiculectomy which put many a helpless cripple on his feet once more. I saw Dr. Fuller perform this operation before the American Urological Society in New York in 1911. At that time he had operated on 300 patients with many brilliant results. The same can be said of Dr. Cunningham, of Boston, whose seminal vesiculectomy has robbed the home of the incurable of some of their sure thing inmates. But milder methods should always be tried faithfully before resorting to extreme surgery.

As to gonorrheal epididymitis, in recent years many attempts have been made to lessen its average duration of severity by surgical procedures, such as exposure and puncture of the tubules. I personally feel that these short cuts are failures and that immobilization by a properly fitting suspensory, rest in bed, hot applications, preferably the hot water bag, to the affected side, is the logical and, everything considered, the best treatment.

I am indebted to Professor L. E. Schmidt and Professor V. D. Lespinasse, both of whom I served under as an assistant in the clinics of Northwestern University Medical School for fifteen years, for their many practical suggestions and ideas regarding the pathology of gonorrhea and its complications. Many of the practical points that I have tried to emphasize have been learned by seeing and absorbing their splendid work in the field of urology.

Gonorrhea in its ravages has reached a dangerous high water mark and it is going still higher. Statistics so far as they go and can be depended upon show a marked increase in the number of new cases in recent years. We all realize that we are in the age of indiscriminate and excessive venery. The streets are lined with women dressed in such a manner as to attract men's sensual desires. In the old days when a man met a sweet girl it was an admiring glance upward, but these days it is a sensual look downward instead. A woman modestly dressed these days fails to qualify but has to take off her hat to her sister with the bobbed hair, x-ray apparel, sleeveless effects and the little vanity box's continuous performance. Sen-

sual feasts are the order of the day. It will probably take a catastrophe such as old Noah had to contend with to change these present day exhibitions and tendencies. Even grandmothers have caught the fever and have discarded their somber clothes for the glad rags. Even they do their little bit to turn men from stability to uncertainty.

All this sensuality does increase our influx of cases of venereal diseases. Effectual prophylaxis is the great trump card in the real attempts to stamp out gonorrhea. It should be broadcasted and a poster put on every gate post telling of its need. Circumcision should be obligatory and required by the State Department of Health the same as vaccination against smallpox. Prophylaxis performed by the copious use of soap-suds which removes the tenacious mucus, followed by the act of urination will usually prevent disease.

Fear rather than conscience is the factor we must recognize that will keep men from indulging indiscriminately in dangerous venery. How many men that are free from venereal diseases have told me that years ago they accidentally got into one of these so-called museums of anatomy and the horrible and repulsive sights depicted by these plaster reproductions made them have a mortal fear of venereal disease and created a silent resolve to take no chances until married to a pure woman. I have such a collection which formerly graced old South State Street in its balmy days. Could such a collection as this be taken from town to town for the younger set to gaze upon, I am sure it would do ten times more good than voluminous lectures and treatises now in vogue and secure honest-to-God results in many instances.

SUMMARY

1. Gentleness is the keynote to the successful treatment of gonorrhea.
2. Mop out the inflamed urethra with $\frac{1}{4}$ per cent. solution of silver nitrate instead of using injections or irrigations which are responsible for a large percentage of cases of posterior urethritis and its dangerous complications.
3. Discourage the so-called free clinics that treat patients well able to pay. Their presence and encouragement is an imposition and slur upon the organized medical profession that is

trying to live up to decent medical standards and ideals.

25 East Washington Street.

DISCUSSION

Dr. J. P. Simpson, Palmer, Ill.: Dr. Mowry's paper affords me much spiritual comfort, because in these days when so much is said about our duty in treating and eliminating venereal disease, thus reaching the seventh heaven or social millenium, I at times become introspective and feel that I should come down to the mourner's bench, because this class of practice is distasteful to me since I began doing general surgery and I have declined much of it.

Now after hearing Dr. Mowry's exposition of the subject and the strong case that he has made out against the pernicious meddling that often is resorted to in these diseases, it would appear that I have actually contributed somewhat to the welfare of some of these unfortunates by letting them alone. So that I should really take my place in the hallelujah chorus.

He sounded a true note when he stated that one of the greatest factors in prevention is education. If a young man can be made to understand the horrors of venereal disease, he will be most likely to escape them. If they can also be taught that early treatment, by the educated physician, and not by spine adjusters and their ilk, they will the more readily seek such help, instead of trying to hide their troubles until they become loathsome.

Only a few years ago lepers had to be run down and captured, like the modern manufacturer of "Volstead Bitters." Now they seek the Leprosariums with every hope of being restored to health and civilized society.

This museum of horrors that the doctor has on exhibit should be effective—like the strong card that the great Peter Cartwright used to play at his revivals. If, after a week or more of earnest entreaty the mourner's bench still had few occupants, he would, in a dramatic manner, exclaim: "You people should be taken by the hair of your heads and shaken over purgatory for about fifteen minutes. You would then see the error of your ways."

Dr. F. Emerson Inks, Princeton: I don't handle gonorrhea cases. But in regard to free clinics, I think Dr. Mowry spoke a word of warning. This is how we have controlled the clinics in our county. We have some good people, so they have a crippled children's clinic, a tuberculosis clinic and a venereal disease clinic. The doctors got together and decided that these should be real clinics. The tuberculosis clinic is just for diagnosis. No treatment. The crippled children's clinic is for those who cannot afford treatment otherwise.

In regard to the venereal clinic, a few of us got together and got the other doctors back of us and decided we would take the best man who was getting good results to run that clinic. It was given out that anybody coming to that clinic would have their financial standing looked up either by the visiting nurse or by the chief of police. It was also given out that

anybody coming to that clinic was under the control of the police, so that if they didn't come in when the next treatment was called for the chief of police or the visiting nurse with police powers would go out and bring them in.

So we have done away in our county, practically, with the people who can afford to pay going to these clinics. If you can get it so that they are under police control and these people know their financial conditions will be looked up and the police can look after them if they don't obey the laws, you will do away with a large part of the well-to-do people coming in.

Dr. R. O. Hawthorne, Monticello: He is changing his ideas since I knew him in school. He mentioned some of the newer drugs on the market. I would like to know if his opinion about the merits of mercurochrome are individual, or are generally recognized by the genito-urinary men. I notice Parke-Davis advocates dibromin, which has a phenol coefficient of 105 when tested on the gonococcus. What has been your experience with this?

He mentioned soap. I have been trying to get some literature on the use of soap, especially with the female. We have been using a little recently in wool tampons. First swab out with liquid soap and then insert the tampon. Has this alkaline treatment any merit over the many others?

Dr. F. H. Renberg, Chicago: I would like to ask Dr. Mowry whether or not in the irrigations which he strongly condemns if the amount of pressure used would not make some difference? Where a low pressure irrigation would be harmless and not any more harmful than a swab, which one could liken to a piston? The difference being one between hydrostatic pressure or piston pressure. Personally in my experience I have found that where an irrigation is made with low pressure, no harmful results occurred.

As a preventive I have used an internal antiseptic such as urotropin as a precaution against the development of a posterior urethritis.

Dr. A. E. Mowry (closing): These (referring to wax models) are only samples. There are twenty or twenty-five of these things, that used to be on South State Street in Chicago. This layout was only to scare the men. Lots of times they got scared and didn't go upstairs. I think if this stuff could be taken around it would be a God-send.

As far as tampons are concerned in a woman, they are rotten. You are just fooling yourself and the woman, too.

As far as urotropin is concerned, that is also rotten. I can't agree with the doctor on urotropin at all. Watch it closely. It irritates not only the urethra but has a tendency to create nephritis. It is absolutely contraindicated in all cases of gonorrhea. We tried giving urotropin in gonorrhea. We would watch the cases and they would say, "The urine smarts and I don't feel so good." My advice is to leave urotropin strictly alone when treating gonorrhea. My personal opinion is it is not good for anything.

About soap suds. Of course, with a woman it is hard to use. In a man, it is simple. You can always

get a piece of soap and it will kill these spirochetes. I have often thought of using soap suds in a woman, but I have not been really successful.

Now the doctor asked about irrigations. I am against them. If you have an ulcer on your tongue you touch that with silver nitrate and you say, "It feels better." Take all the mouth-washes and it doesn't seem to relieve. Irrigation—I am dead off of that. We have all got a right to change our ideas.

I have seen the county hospital loaded full of cases following irrigations. The great secret in gonorrhea is to keep it from becoming incurable. If you keep it in the anterior urethra, all right; but the minute you start irrigation and the man says he wants to urinate, you have started something possibly bad.

Personally I know I have been getting results almost too good to be true by going in and mopping gently and doing it right instead of irrigation. I am not trying to put myself up as a great man, but, so far as I know, I am the first man that advocated mopping.

INTRAVENOUS USE OF MERCUROCHROME-220 SOLUBLE. CASE REPORTS

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CHAMPAIGN, ILL.

Due to the many conflicting reports as to the effectiveness of Mercurochrome-220 Soluble intravenously, there arises a question as to its value. Several have found that the use of this dye is indicated as a germicidal agent in the human body.¹⁻⁴ Brill and Myers found that its use in no way interfered with the progress of the infection.⁵ The first case reported here is that of a patient suffering from an extreme suppurative condition.

For treatment, a sterile one per cent. solution of Mercurochrome-220 soluble was used, the crystals being dissolved in sterile distilled water, and the amount injected being calculated per kilogram of body weight.

Case 1. This patient was a vigorous young man 26 years of age who had tonsillitis at the age of five causing chronic otitis media; a low grade osteomyelitis from injuring his right foot at the age of seven; and a supposedly cured gonococcus infection of seven years duration. In 1923 the old osteomyelitic foot, being again injured, was amputated.

Shortly after this amputation was performed, he developed vertigo from his aural condition. His left testicle was removed because of pus formation and attempts were made to drain the inguinal region. A bacterial vaccine of Staphylococci and Escherichia coli organisms was prepared from a specimen of pus. This vaccine was used for about a month. At first it seemed to give satisfactory results but later did not and was discontinued. The suppuration became so much worse

that the patient was admitted to the hospital for surgical drainage of pus.

About a month following the removal of his testicle the patient was given 5 c.c. of a 1% sterile solution of mercurochrome intravenously. This caused a decrease in suppuration. No undesirable effects resulted. Fruitless search had been made in his urine, pus and excised gland for *Mycobacterium tuberculosis*. Albumin had been present in his urine to the extent of 0.3% by the Purdy's centrifuge method. After the injection of Mercurochrome it dropped to 0.15% on the second day, it then rose again to 0.3% on the fourth day. His temperature which had reached 101.4 in the afternoons dropped below normal on the third day.

Six days after this first injection, 32 c.c. of a 1% solution of mercurochrome (5 mg. per Kg. of body weight) was given intravenously at 10 A. M. In less than half an hour he developed a severe chill, flushed face, shortness of breath and emesis. At 12 M. his temperature had risen to 102 and at 4 P. M. to 104, then dropped to below normal on the next day; on the fourth day it rose to 100.2, then gradually dropped to below normal on the eleventh day. Albumin in the urine which had been present 0.3% two days previous to the injection dropped to 0.1% at 11 A. M. then went to 2.2% at 2 P. M., to 3.2% at 4 P. M. then dropped to 0.5% on the next day. On the second day it dropped to 0.2%. On the ninth day the albumin rose to 0.5% then gradually dropped to a mere trace. After 48 hours pus drainage from the inguinal region stopped entirely but started again on the next day and kept draining. The character of the pus changed from a thick yellow discharge to a thin lighter color. A direct microscopic examination of stained smears of this pus showed a few *Escherichia coli*, *Staphylococci* and *Gonococci* on the day of the injection. Three, six and ten days later no cells were visible on direct microscopic examination. Cultures showed *Staphylococci* and a few *Escherichia coli* organisms, later *Staphylococci* and still later both types. On the fourteenth day a direct microscopic examination of a smear showed many of all three types of organisms. A blood Widal was negative.

A study of the blood showed a slight decrease in the total leucocyte count; in the differential count of leucocytes an increase to normal of the polymorphonuclear neutrophils and a decrease to normal of the lymphocytes.

All disagreeable effects including salivation disappeared during the first week after the injection. The patient was dismissed from the hospital about a month after the first injection of mercurochrome.

Within seven days this same patient developed erysipelas on his nose and cheeks. An intravenous injection of 6.5 c.c. of a 1% solution of mercurochrome (1 mg. per Kg. of body weight) was given with a slight chill resulting followed by a rapid clearing of the erysipelas. His old condition returned within a week after this, the pus drainage increased, the patient was returned to the hospital and died shortly from general septicemia.

Case 2. A man with a gonococcus infection of six months duration was cleared and remained so after

one injection of four milligrams per kilogram of body weight.

Case 3. A young man with gonococcus infection of one year duration under treatment at other places, received five one milligram per kilogram of body weight injections, then a two, a three and finally a five milligram per kilogram of body weight injection with only temporary results.

Case 4. A man suffering from erysipelas on one side of his face was quickly cleared after one injection of three milligrams per kilogram of body weight without undesirable effects. This condition had not returned to date (Three months).

Case 5. A young woman from whom an extensive carbuncle on her upper lip had been excised, was quickly cleared after one injection of five milligrams per kilogram of body weight.

SUMMARY AND CONCLUSIONS

Since some cases show beneficial results, while others do not, there arises a question as to the effectiveness of the use of mercurochrome as a germicidal agent within the body. From the results obtained here and from other cases, it seems probable that one large initial injection will give better results than repeated smaller doses. For a disease like erysipelas the dye seems to be very efficient. The disadvantages of the treatment are the undesirable effects resulting from the mercury. Perhaps in the near future a neo-mercurochrome may be developed from which beneficial results may be obtained without the undesirable features.

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CATARACT PREVENTABLE COMPLICATIONS AT TIME OF OPERATION AND DURING THE HEALING PROCESS*

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Most complications occurring at time of operation and during the healing process are preventable provided there is a skilled operator, a

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good assistant and the eye is well anesthetised.

An operator can only become skilful by practice and practice makes perfect. It is difficult, however, to obtain practice material and the operative results are often disastrous. Inexperienced operators can find excellent practice in every step of the operation, as well as in the handling of complications by operating repeatedly on the

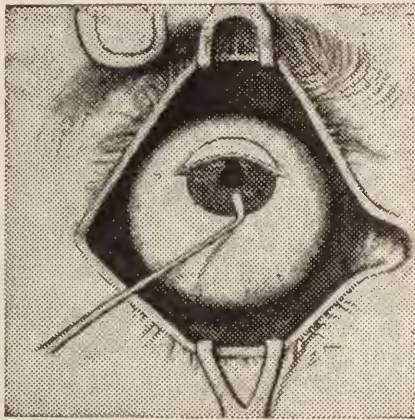


Fig. 1. First position in lens delivery. Lid hooks in position.

eyes of kittens six weeks old, which are easily obtained. The cornea of the kitten is about 11 mm. in diameter and is quite like the human cornea. The anterior chamber is about the same depth as in the human eye and the iris is more like the human iris than that of any other available animal.

Assistant—The assistant's position is quite an important one and he, like the operator, can become quite proficient by practice. Nurses make better assistants than doctors because, not aspiring to become operators, they attend more strictly to the duty of holding the lids away from the eyeball. Nurses can practice by holding each other's lids; and, under supervision of the operator can in a very short time become quite proficient.

Selection of Patients—Beginners should select patients over 60 years old. Experienced operators also changing from a technique they are familiar with to a new method, should do likewise; then if a complication occurs, they would be well advised to abandon the old procedure and proceed with the one with which they are familiar. A patient with a senile cataract that is half or more mature must have some operation to restore vision and there is not much selection to be made.

It is not possible to determine the size of a

lens until an attempt is made to remove it, nor can one know how the patient will deport himself. It is necessary, however, to have an eye quite free from inflammation, lids fairly healthy, the pupils reacting to light, tension normal, the lachrymal sac free from pus and sufficient anesthesia to perform a painless operation.

Preparation of the patient—Very little preparation is necessary, but it is well to make a 24-hour conjunctival culture. An ointment composed of 5 per cent. cocain and 5 per cent. euphthalmine is inserted between the lids of the eye to be operated upon, and the eye bandaged for 15 minutes before the operation.

Anesthetic—A few drops of 4 per cent solution of cocain is then instilled in each eye. Five minutes after this instillation the patient is taken to the operating room, where a second instillation of a 4 per cent. solution of cocain is instilled into the eye that is to be operated upon and in addition 5 drops of the 2 per cent. solution of cocain is injected subconjunctively at the point where the iris is to be cut. The face, eyelids and brow are then washed with soap and water. Soap entered the anesthetised eye is not annoying. Five minutes after the injection and second instillation of cocain a third instillation of cocain is made in the eye that is to be operated upon; and five minutes from the last instillation, or ten minutes from the time the patient is placed upon the operating table the eye

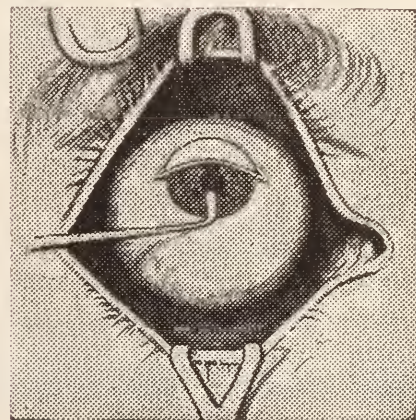


Fig. 2. Second position in lens delivery. Lid hooks in position.

is quite insensitive and a painless operation can usually be performed. If the patient is nervous it is well to postpone the operation one day and then give a hypodermic of $\frac{1}{4}$ gr. morphin three

quarters of an hour before operating or at the time the cocain and euphthalmine is applied.

Lid Control—Deficient lid control is the cause of many complications. Lid hooks should be inserted before the operation is begun and a competent assistant can be depended upon usually to hold the lids in such a manner that pressure is kept from the globe during operation. When

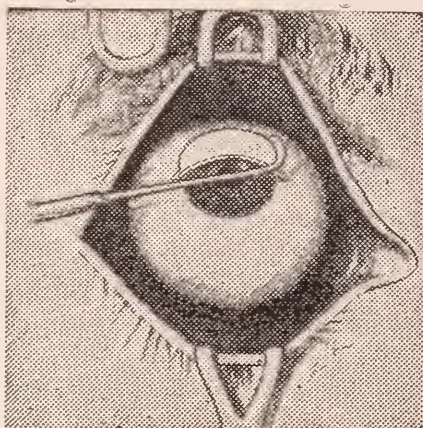


Fig. 3. Third position in lens delivery. Lid hooks in position.

the hooks are in position the eye is flushed with 4 oz. of 1:2000 warm bichloride of mercury solution, which is not painful because the eye is anesthetized. Should some of the solution enter the unoperated eye, it will not be felt because this also is anesthetized. The lid hooks are not removed until the operation is finished and the lids closed, at which time, they are slipped from beneath the lids.

Incision—A faulty incision may cause many complications, but with sufficient practice on kittens' eyes, one may expect a good incision, which should be just short of one half of the cornea.

Full Iridectomy—The purpose of an iridectomy is to prevent iris prolapse. If improperly done, is often the cause of many complications and it must be executed with delicacy.

Peripheral Iridectomy—Many operators prefer a peripheral iridectomy, which is made for the same purpose as a full one. If a loss of vitreous precedes lens delivery the peripheral iridectomy should be converted into a full iridectomy to facilitate spoon delivery.

Capsulotomy—The capsule is cut with a cystotome or a piece of it removed with forceps. The lens may be dislocated with either of these instruments and this would be classed as a very

serious complication; a light hand is therefore necessary at this time. If the lens is to be removed in the capsule the capsulotomy is omitted.

Lens Delivery—Most operative complications occur during lens delivery. In the capsulotomy method the lens is expelled by pressure in the same manner as in the Smith or Knapp intra-capsular method.¹ (Figs. 1-2-3.) In Barraquer's method² the lens is pulled out by suction grasp. (Figs. 4-5-6-7-8-9-10-11.) In Fisher's³ by the Smith method, except that in difficult cases the lens delivery is aided by a sharp needle. (Fig. 12.) In Verhoeff's⁴ and Torok's⁵ method by pulling upon the lens with toothless forceps, together with pressure upon the cornea. (Fig. 13.) If the lens cannot easily be expelled with safe pressure it is well to enlarge the opening in the cornea with blunt pointed scissors.

Cortical and Capsule—In the capsulotomy method it is quite necessary to remove as much of the cortical as appears safe to the operator. If the capsule is ruptured in the intra-capsular operation, the cortical and as much of the capsule as can be done with safety are removed.

In removing cortical the lid hooks are removed and a Smith speculum inserted, because a little pressure is helpful in removing the debris. There is danger of loss of vitreous in removing the debris, but there is also great danger to the eye if it remains. It is advantageous to make the

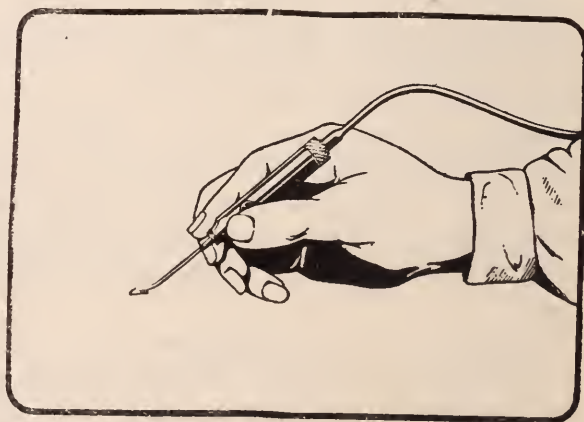


Fig. 4. Position in which the Erisifaco should be held.

eye as clean as possible even at the expense of vitreous loss because of less post-operative complications.

Lost Lens—If the lens drops out of sight the eye is bandaged for four days, at which time the lens usually resumes its position. The incision

is reopened as in a cataract operation and the lens removed with a Smith spoon. If the lens cannot be seen at first dressing, the eye is bandaged for four days, but no attempt at removal of the lens is made unless it can be seen.

Toilet—Poor toilet is the cause of many iris

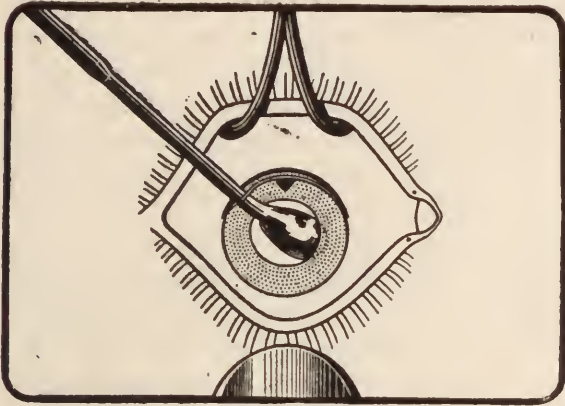


Fig. 5. The crystalline lens is raised less than one millimetre towards the top.

prolapses which are very often followed by post-operative inflammation. The spatula, according to Holland, should be moved away from the edge of the incision, and not toward it, to avoid pushing the iris into the wound.

After a full iridectomy 1 per cent. atropin ointment is inserted between the lids. After a peripheral iridectomy 1 per cent. eserine ointment is inserted.

Bandage—When the operation is finished 2 per cent. yellow oxide of mercury ointment is applied over the closed lids, both eyes are bandaged and the patient is put to bed for 24 hours.

Complications After Operations—Many post-operative cataract complications have their origin in a defective operation. Prolapsed iris and its consequences probably cause more trouble than all other complications combined. Prolapse is more disastrous than slight vitreous loss: still many incarcerations and slight prolapses as well as slight loss of vitreous do not cause any loss of vision.

Gaping Wounds—When a gaping wound is found during the healing process there has usually been some complication during the operation. The cause is usually capsule or cortical material lodging between the lips of the wound, which should have been removed with any other debris during the operation.

Iridocyclitis—Iritis and iridocyclitis are the most common and dangerous complications during the

healing process and usually follow some faulty operative technique. Treatment must be energetic. Two leeches applied to the temple, an enema, ten grains of aspirin every four hours and mercurial inunctions will often suffice in cases that do not require surgical interference.

Everted Cornea—Small incisions are probably the cause of more everted corneas than large ones. The cornea must be replaced if possible and a cut made with blunt pointed scissors at each corner of the wound, will be found very helpful. Lid hooks are quite indispensable in keeping all pressure from the globe while replacing the cornea.

Corneal sutures, or covering the wound with conjunctiva, are recommended.

Temporary Insanity—Dreams might be a better term than temporary insanity. They can be prevented or at least lessened by having one of the patient's friends sleep in the same room, in order to speak to him, if dreaming. The patient will often recognize the voice of a friend when the voice of a stranger might intensify his dream. Removing the bandage is also recommended.

Hemorrhage of the Choroid—The most serious complication that can occur during or after the cataract operation is hemorrhage of the choroid. Plus tension favors this complication; but it un-

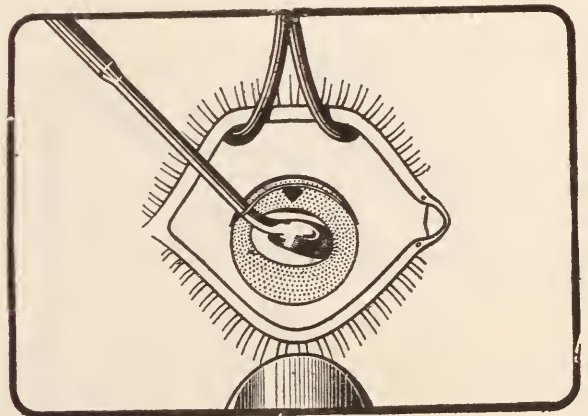


Fig. 6. The movement of rotation commences in such a way that the superior border of the crystalline lens follows the patellar fossa from above downwards.

fortunately occurs when all precautions have been taken and when the tonometer findings are normal. If, after a cataract operation, the patient complains of a feeling of faintness or severe pain or requests a glass of water, he should be given a hypodermic injection of morphin, anticipating

a hemorrhage of the choroid. When it occurs the vision is always lost.

Infection—Col. Smith⁶ states that in his observations when infection sets in it progresses in spite of all efforts, but successes have been reported by Woodruff⁷ following cyanide of mer-

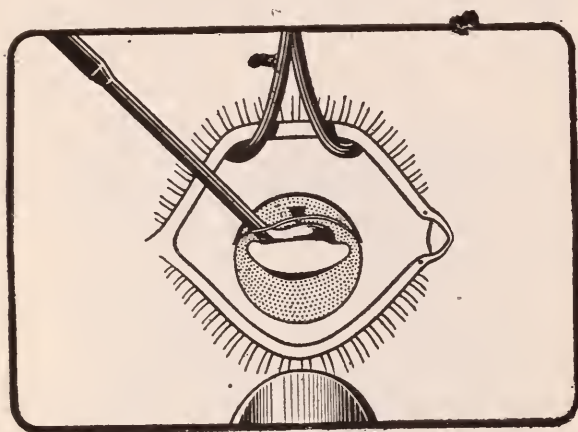


Fig. 7. Represents the period when the crystalline lens has made one fourth of the turn.

cury injections. Injections of milk, also typhoid vaccines as well as frequent instillation of optochin have been used extensively with favorable results, especially in anterior involvement of the globe.

After Treatment—Many complications during the healing process are due to too early and too frequent treatments. Objections have been made to the so-called "no after treatment" method, but probably more complications follow the daily-treated cases.

Very few complications are benefited by treatment other than that which can be given without opening the lids; and many serious complications can occur by too early and too frequent treatment. If the lids are not swollen no good can come from inspecting the eye for a week after the operation.

CONCLUSIONS:

A good operator, a competent nurse, efficient lid control and proper anesthesia will prevent almost all complications that occur during the operation and healing process.

Debris—When the capsulotomy operation is performed less post-operative complications will follow when cortical debris is removed. In doing this a loss of vitreous must occasionally be expected. When the intra capsular operation is performed with a ruptured capsule the cortical and capsule are removed to prevent post operative complications during the healing process.

Vitreous Loss—Competent capsulotomy operators would seldom have vitreous loss were it not for their anxiety to clear the eye of cortical; but when this is done the percentage of vitreous loss is quite as great as intra-capsular operators report. The average operator will have less vitreous loss in the capsulotomy than in the intra-capsular method; but the former will have more post-operative complications than the latter.

Experience—Experience can be obtained in every step of the operation by any method, as well as of all the complications, by operating upon kitten's eyes.

Experienced Operators—Suggestions for the prevention of complications during the operation and healing process will be expected from those who do large numbers of operations, such as is done in Holland's clinic in Shikarpur, India, and Barraquer's clinic in Barcelona, Spain.

Helpful suggestions will be found in detailed reports of large numbers of operations such as Capt. Cruickshank's study of 2,755 operations from Holland's clinic, 1923-1924, to be published later. Also 115 Barraquer's operation.

It is admitted by all ophthalmic surgeons that better visual results can be expected if the lens is removed within its capsule without complications; and this method offers the added advantage of the cataract being operable at any stage of maturity. For those who desire to change from the capsulotomy to the intra-capsular operation, Fisher's method¹⁰ is recommended because it enables competent operators to change from the capsulotomy to the intra-capsular method without increasing complications.

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DISCUSSION

Dr. C. C. Clement, Chicago: Dr. Fisher spoke of the necessity of skill in operating. A skillful operator is certainly the greatest factor for safety in cataract extraction. In the hands of a skillful operator most eyes are safe. In the hands of an unskillful operator most eyes subject to cataract extraction are in very grave danger. Skill, of course, is the result of practice and practice in cataract extraction is probably one of the most difficult things in the world to get. Some-

times we wonder where men develop skill in cataract extraction. They certainly do not get it in their college days. They get very little of it in their internship, even in special hospitals. They get very little of it in post-graduate hospitals.

Dr. Fisher suggests practice on kitten's eyes. That certainly is of great help. Dr. Suker just now said

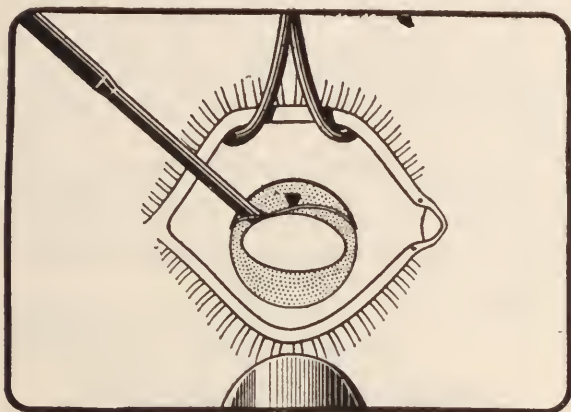


Fig. 8. The posterior surface of the crystalline lens comes in contact with the posterior surface of the cornea.

that Fisher has been talking kitten's eyes for so many years that his kittens must be cats by this time.

It certainly is a fine thing. I think practice on pigs' eyes and sheep's eyes is practically worthless. They are so unlike the human eye that you can gain very little from them. In the kitten's eye you have a very close approach to the human eye and certainly the best thing we can get. I am glad Dr. Fisher has brought it to our attention once again. I do not see why it is not universally used in teaching institutions. As I understand it, it is not.

A skilled assistant is certainly of great aid in cataract extraction, but I imagine that half of the extractions performed in this state are performed either without skilled assistants or without assistants at all.

There are only a few hospitals where skillful eye assistance is available and it appears that this condition is not going to improve. The average interne is not interested in eye surgery and he has little opportunity to develop any skill in assisting in operations on the eye.

Perhaps closer cooperation on the part of the doctors, so that they might assist each other, or a concentration of work in hospitals showing some inclination to properly take care of eye surgery will help, but I imagine most of us will have to perform our work in hospitals where we will have to operate almost without assistance, and it is probably better to cut our garment according to the cloth and develop a technique that is a sort of one-man operation than to try and drag in some unwilling assistant who may bungle the job.

The question of anesthesia that Dr. Fisher brought up is a most important one. I don't think you can get a dependable anesthesia by instillations in the eye. I think the anesthetic has to be injected sub-conjunc-

tively if you expect to anesthetize the iris, and certainly traction on an iris that is not anesthetized is the cause of a lot of trouble.

I have had no experience in the use of cocaine ointment, hence I am not in a position to criticize it intelligently. It may be good practice, but it sounds like it would be bad physics to put an ointment in the eye a few minutes before you are going to put in the solution. It would appear to me it would interfere with the action of the solution. It may be you get enough anesthesia from the ointment so that you don't need the solution.

Vitreous loss is the bug-bear of cataract extraction. That is the thing everybody fears and the thing we would do anything in the world to prevent.

The use of the double-lid hooks will do more to prevent it than anything else. I think they should be substituted for the speculum in every case where you can have a skilled assistant. If you can't have such an assistant, it is better to stick to the speculum with all of its faults.

I understand that Major Smith introduced or at least popularized the use of the single-lid hook, but it seems to me it doesn't compare with the double-lid hook, and I think Dr. Fisher has done a great deal for ophthalmology in inventing and introducing this hook.

Medical science is prolonging the average life by several years, which means that we will have more old men, and we will have more cataracts because science has not kept the lens clear. Economic pressure makes it necessary for more old men to work now than in former years, and it will be a great difficulty for these men to take from a few months to several years for the lens to ripen, because they have to continue at work. Hence, it seems to me that there will be no question but what there will be a demand for

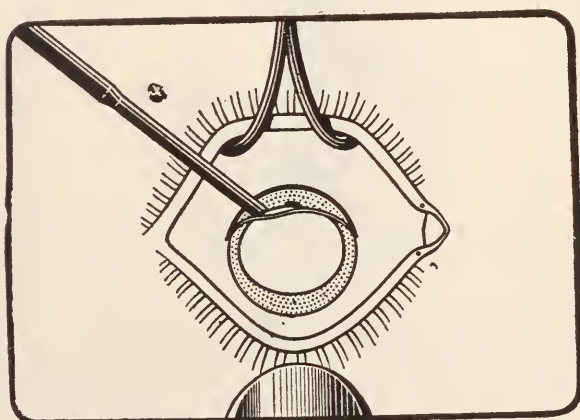


Fig. 9. Represents the last period of rotation.

more intracapsular operations in the future than there has been in the past.

It will be necessary to perform some sort of operation on the immature lens, and I think it is timely to call attention to the things that safeguard the extraction of the immature lens. The use of the lid hooks and the use of the needle, I think, do this to a greater extent than anything else. The lid hooks keep pressure

off of the globe and the needle at hand gives the operator a feeling of confidence in the first place, which must be reflected in his work and, in the second place, it removes the necessity of using too much pressure to extract the lens. If it doesn't come out with a little pressure, you stick the needle in and lift it out.

Dr. H. E. Middleton, Alton: I would like to ask

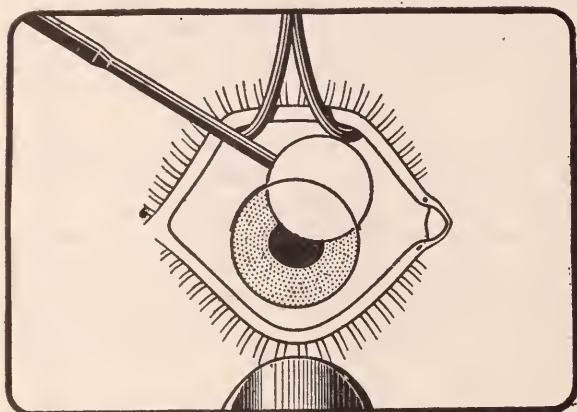


Fig. 10. Withdrawing the instrument from the eye the cataract is removed completely.

Dr. Fisher if he has ever observed any accidents after the use of morphin hypodermically? I observed in the last few months a case of choroidal hemorrhage following an emesis from morphin given hypodermically.

Dr. D. D. Barr, Taylorville: I would like to ask a couple of questions. One is about the use of butyn. I read a report or two some time back. Dr. Gradle made one report, and I read some others on the use of butyn in such cases.

I also would like to have the doctor explain just

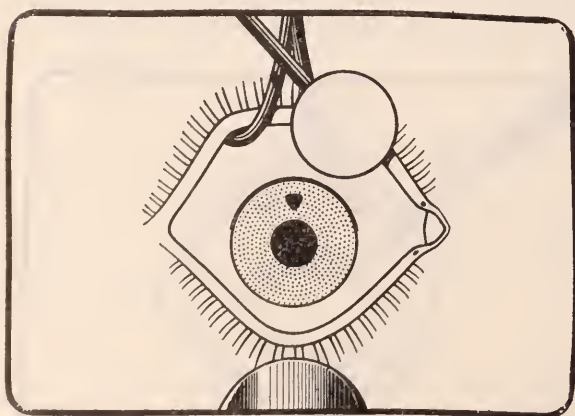


Fig. 11. In terminating the extraction the pupil is black, central and round.

what he does after a choroidal hemorrhage, whether he did an exenteration or what treatment he did.

Dr. H. W. Woodruff, Joliet: It is not possible to resist the temptation to go back and tell you about the time that Dr. Fisher returned from his first trip to India. Smith advocates the use of one drop of a two per cent. solution of cocain. Am I correct?

Dr. Fisher: A few drops at one time.

Dr. Woodruff: So when Dr. Fisher returned we

had some cataract cases for him to operate upon. We were anxious to follow the exact technique which included this anesthesia. Now he didn't get along very well with that anesthesia.

You see now to what extreme he has gone to secure anesthesia. Only a very short time ago he was injecting the lids with novocain. I was surprised to learn since coming down here that he was no longer injecting the lids to prevent the patients squeezing the lids. All of these things simply go to show that Dr. Fisher has not been completely satisfied with any of his methods that he has been using during all these years.

If you could control or your assistant could control these lids perfectly, there would be no necessity for injecting them. I don't know just what happened to him that he has dropped that method of controlling the lids, the injection of novocain.

It should by this time not be necessary to emphasize the fact that infected eyes can be saved; that is, in-

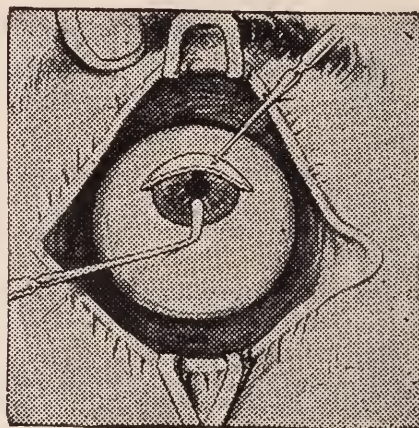


Fig. 12. Fisher's Needle. Fisher's method of removing the lens when it refuses to be born, or when a slight loss of vitreous has preceded lens delivery.

fection following a cataract operation. I reported in 1914 five cases of infection which were saved by the deep injection of a solution of cyanide of mercury.

Now, if you are absolutely certain that you are proof against having an infection, pay no attention to what I am saying. But if there is any doubt in your mind about that—that is, if you fear that you may have an infection—then don't wait for eight days before looking at the eye. This has happened to more than one operator, that the patient went along without any pain at all, without any complaints whatever, and, when the bandage was removed, the entire cornea had sloughed away. So that I myself do not feel quite secure without examining that eye.

But I dislike the term "meddlesome surgery" or "fooling with the eye," because I feel that if I am competent to operate on the patient's eye, I am competent to look at it, and I usually perform operations that are of such a character that I rather like to look at the eye.

The fact remains that those eyes can be saved if the injection can be used early enough. Now, it mat-

ters not whether the infection is in the wound or whether it is in the anterior chamber. Any infection in the anterior part of the eye and the deeper infections probably come from within anyway. That is they are endogenous infections. But all of these anterior infections with possibly the exception of diabetic cases can be saved by subcapsular injections made very early.

Dr. Austin A. Hayden, Chicago: I want to speak for just a moment on the subject of endogenous infections complicating cataract extraction.

I have seen eyes from which cataracts have been removed that did not clear up very quickly, and with the administration of a foreign protein, three minutes' boiled milk, I have seen those clear up very quickly. I have also seen some that did not clear up very rapidly and that did not clear up until the teeth, the

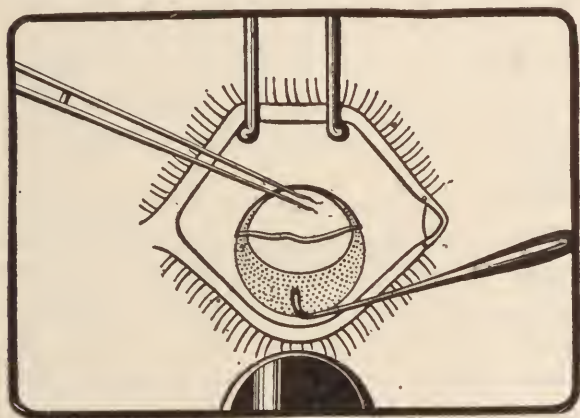


Fig. 13. Verhoeff and Torok compress the cornea like Smith with the least pressure and at the same time withdraw the cataract with a pincette.

tonsils and the sinuses were carefully looked at and received adequate and proper treatment.

Now nothing has been said or very little has been said by the ophthalmologists throughout the country of the possibility of looking after these foci before any operation is done. It seems to me that a very important question is being overlooked in that respect.

Cataract extraction is hardly ever an emergency operation. It is most always something that can be done within a few weeks quite as well as it can within a few hours or within a few days, and, in view of the importance of these endogenous infections, it seems to me that that is something that is overlooked very frequently.

Dr. Fisher, in response: I feel encouraged to think that six gentlemen have discussed this paper and only one of them has mentioned vitreous. The greatest bug-bear to a cataract operation up until now has, seemingly, been the loss of vitreous.

Ten years ago I read a similar paper and the members were at that time worrying about vitreous loss, but vitreous has been lost entirely in this discussion, except by one member.

It is difficult to operate in strange general hospitals, but this can be overcome.

It is not difficult to train a nurse to make a far better assistant than your associate. My experience has

been that, when a doctor holds the lids, he is far more interested in the operation than in the lids, and naturally so, but the nurse is not interested at all except in holding the lids from the eye. I don't use cocain ointment for anesthesia in cataract operations, but for preparations I use euphthalmin and cocain 5 per cent. each in ointment.

One of the gentlemen asked about morphin. Morphin is not good to give at any time, but in a nervous patient I prefer morphin, but not until they demonstrate nervousness on the operating table even after euphthalmin and cocain has been used for 45 minutes. If they are nervous and excited, it is advisable to wait 24 hours and then give $\frac{1}{4}$ grain morphin hypodermatically 45 minutes before the operation, but I don't like to give morphin before cataract operations.

I have not used butyn in cataract operations because complete anesthesia usually can be obtained with cocain.

Dr. Suker's idea of a full iridectomy is perfectly proper, as he says, for those with little experience.

I referred to milk in my paper. But as to the teeth, tonsils, sinuses, etc., very many patients come long distances and it would be a very great hardship to many to have their teeth extracted or to have the surgical work done that Dr. Hayden refers to.

In India, according to Dr. Holland, there are five dentists for five million people in his territory. The poor people in India have practically no dentists and I have seen more infection at home than in India. Focal infection may be over-estimated in cataract work, but I do believe if one is going to attend to the teeth, he should wait until the gums heal or one is liable to do more harm than good. If the patient can wait six weeks there is no objection to it.

I have abandoned injecting novocain in the lids because it causes more pain than the operation and often makes a nervous patient when without it he would be quiet.

THE WASSERMANN TEST

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CHICAGO

The Wassermann test possesses enormous value in the diagnosis of syphilis and as a serologic guide to its treatment. Owing to the importance of syphilis to the individual and to the community, standardization of the test is particularly desirable in order to increase its delicacy, uniformity and reliability. The employment of different methods by various laboratory workers has led to a more or less wide variation in the results and occasional confusion in regard to the actual value and stability of the test, all of which points to the importance of the demand for a standard method. It is not an uncommon experience to note discrepancies in the results of

a Wassermann reaction with the same blood serum in different laboratories. All serologists must agree that a certain percentage of discrepancies must be expected with the use of different systems, and particularly with the use of different antigens, even granting that all the tests were conducted with careful attention to detail. Owing to the fact that the Wassermann is not strictly biologically specific and that the technique requires the use of several biological reagents of varying properties, the test is subject to errors in both a positive and negative way, unless carefully and intelligently understood and conducted.

Dr. John A. Kolmer of Philadelphia has done an enormous amount of investigation of the Wassermann test during the past few years, leading up to a standard method which he has proposed and which has proven most satisfactory to a large number of serologists throughout the country. After a year's checking up with the Kolmer method, parallel with the usual technique, it is found to be a more sensitive reaction, giving uniform results and simplified quantitative readings.

Kolmer divides the sources of errors in the Wassermann test into two divisions, (a) avoidable and (b) unavoidable. By unavoidable he refers to that change occurring in the blood of diseases other than syphilis, which may give positive reactions. During the early days of the Wassermann, several diseases were so considered, but the latest opinions give only two such conditions (yaws and leprosy) as consistently giving positive reactions. The avoidable errors exist in the handling of the blood specimen, the biologic nature of the reagents used, particularly the antigens, and to careless or faulty technique.

A standardized method aims to detect and avoid all avoidable errors. Although it cannot account for the personal equation, beyond making the test as clear and simple as possible. The technique which Kolmer has perfected and advised tends to be an accurate quantitative method, very sensitive, but not over so, with a systematic quantitative reading which is easily interpreted. This method fulfills all the requirements which Kolmer gives as being essential for a standard Wassermann. These requirements are six in number.

1. *Practical specificity*; towards avoiding all avoidable errors.

2. *Sensitiveness*; a technique that shall be able

to detect latent as well as active syphilis, without giving a false positive reaction.

3. *Uniformity*; a method that will give uniform results in the same or different laboratories.

4. *Quantitative*; a method that shall be able to really measure the degree of positiveness, thus doing away to a large degree with the personal element and giving an accurate guide, both diagnostic and therapeutic.

5. *Simplicity*; it tends to greater accuracy. The Wassermann, whereas, it appears very complicated to the inexperienced, is perfectly clear to the experienced serologist and simplicity should not be sought for at the expense of accuracy.

6. *Economy*; it is of importance in doing a large number of tests, so that routine examinations can be made possible on all classes of patients.

Handling of blood specimens to avoid all avoidable errors; some serologists claim that the blood serum of non-luetic individuals taken during jaundice, diabetes mellitus, febrile periods of several diseases, including pneumonia, may give falsely positive reactions, but these are really very rare and largely preventable by technical details, especially against anti-complementary reactions. Blood taken during or soon after an alcoholic debauch may give false reactions. Also, blood taken within a hour after a meal may give a chylous, milky serum which may make the reaction difficult to read closely or prove anti-complementary. These things are worthy of attention and thought and should be avoided whenever possible, but they do not directly concern the test as much as the following items.

Blood should be taken aseptically and placed in a bacteriologically sterile and chemically free, dry glass container, tube or vial. The tube or vial should be as nearly as possible completely filled, especially when mailing the specimen, to reduce the amount of agitation and consequent hemolysis, as an excess of hemoglobin in the serum tends to make it anticomplementary. From a laboratory standpoint it is better to leave the serum on the clot and keep on ice until ready for use. All other procedures for avoiding anti-complementary and false reactions are distinctly laboratory and technical procedures.

The Kolmer Standardized Method; the quantitative element of this method is based on a system of accurately measured serum dilutions.

Also, one antigen only is used, as the use of several antigens in the same test only tends to confuse, since the antigens are of different sensitiveness, and such a procedure is therefore working away from the ideal of a standard method.

The Kohnen antigen is a mixture of powdered extracts of several beef or human hearts. Hemolytic and anticomplementary activities are largely removed by primary ether and alcohol extractions. The antigenic properties are recovered by precipitation with acetone and returned to a secondary alcoholic extract with the addition of 0.2% cholesterol. This produces an antigen which is uniform, highly antigenic and but very slightly hemolytic or anticomplementary. At least ten units of this antigen may be used with a standardized technique and this amount is ten to fifty times less than the anticomplementary or hemolytic unit and gives a highly sensitive test without the dangers of non-specific reactions.

The quantitative element is based upon serum dilutions. With the five dilutions used, there is present a maximum amount of serum large enough to pick up the smallest amount of antibody (reagin) and avoid anticomplementary reactions. There is also a smallest amount present to give less than a 100% positive. Between is a range of accurately measured dilutions. There is a sixth or control tube which contains the same amount of serum as the first, or maximum, amount. This method makes the test both qualitative and quantitative. The dilutions used are given below in examples of readings. There is also a definite set of dilutions for spinal fluids. By this quantitative method the degree of positiveness is recorded for each amount of serum dilution used. The usual method of reading is observed as 100%, 75%, 50%, 25% positive and negative, thereby giving a two way quantitative test employing five dilutions with a scale of five readings on each. The test itself is done with a primary ice box incubation of 18 hours, followed by 10 minutes at 37°C. and a secondary incubation at 37°C. for two hours.

Following are examples of readings:

Tube			
1. serum 0.1cc	positive, 100%	1. positive, 75%	1. negative
2. serum 0.02cc	positive, 100%	2. positive, 50%	2. negative
3. serum 0.004cc	positive, 75%	3. positive, 25%	3. negative
4. serum 0.002cc	positive, 50%	4. positive, 25%	4. negative
5. serum 0.001cc	positive, 25%	5. negative,	5. negative

The three readings above given would be expressed in the Kolmer method as follows:

First—44321.

Second—32110.

Third—00000.

The strongest positive would read, 44444 and complete negative 00000. Between is an accurate series of reading as previously described.

The interpretation of the readings is as follows:

100% positive: when positive reaction occurs in any degree in all of the first four or five tubes. ++++0 or ++++1+

75% positive: when positive reactions occur in any degree in the first three tubes. +++00

50% positives: when the reaction is positive in any degree in the first two tubes. ++000

25% positive: when the reaction is positive in any degree in the first tube only, the one with the largest sum of serum. +0000

Negative: when the reaction is negative in all of the five tubes. 00000

This standardized method, when intelligently conducted and interpreted, gives an accurate reading, both qualitative and quantitative. Many laboratories have accepted this method as a standard, and the reports from these laboratories, where inter-checking on serums has been done, show the results to be perfectly uniform, thereby putting the Wassermann on a firmer basis and giving it its real importance both as a diagnostic procedure and as a therapeutic check in the handling of luetic cases. It also makes an intelligent reason for routine examinations, as it practically does away with false and anticomplementary reactions.

29 East Madison St.

CONVALESCENCE FROM DISEASES OF CHILDHOOD

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CHICAGO

Convalescence is a phase of medicine that has been generally neglected until a few years ago. The neglect of this extremely important branch of medicine, which constitutes the transition stage between sickness and health, is most evident from the statement made by Bryant that up to 1920 only 92 articles were listed under the general title of convalescence in the Index Medicus.

Bryant, in his chronological review of the subject, states that although Hippocrates and his successors observed the importance of convalescence, it was not until the seventeenth century that any hospital took heed of the warning of the founders of medicine and made special provision for the care of convalescent patients. Now there is hardly a medical center of any consequence that does not have its associated convalescent accommodations.

Brush makes a very stimulating and worthy appeal for the consideration of convalescence. He states that patients are regularly discharged from the hospital too soon. Hospital efficiency is also greatly increased through the prevention of relapses and recurrences. According to Brush, a day's care in an average hospital costs four to five dollars, while that in a convalescent home costs only seventy-five cents. A convalescent home has modest requirements and building cost is one-third to one-half as much per bed as that of hospitals. Figuring twelve to fifteen patients per bed yearly it costs five to six hundred dollars per patient.

Convalescent homes, Brush says, now admit cardiac cases, convalescent pneumonias, latent tuberculosis, short term orthopedics, chorea, mild nervous cases, surgical dressing cases, malnutrition and various subnormal and retarded children.

It is my intention to review here some of the important medical and sociological problems that arise in connection with convalescence from various diseases in childhood.

Heart Disease: Children with heart disease constitute the largest number of medical convalescents. This subject is of vital importance because of the careful watching necessary to forestall future serious damage to the vascular system. It carries with it the possibilities of reasonably normal activity in later years or of chronic invalidism.

Convalescence begins immediately upon the recession of an acute attack of endocarditis. The first consideration is to prohibit a too early rise from bed. Clinicians agree on the importance of rest in the treatment of heart conditions. At first complete rest is necessary, later, as the heart returns to its normal size, exercise should be begun gradually. The determining factors on the length of stay in bed are the size of the heart, the presence or absence of murmurs, and the

general condition of the patient. Judgment must be used in these cases as to whether or not more strain is brought on the heart by the fretting and irritability on being kept flat in bed than if the patient is allowed to sit up in bed and play with toys. Very weak patients should not be permitted to feed themselves.

Levinson divides cardiacs from the standpoint of convalescence into three groups. Group 1 includes those children who have recovered sufficiently to be up and about and to indulge in some exercise without detriment to the heart condition. Group 2 includes children who are permitted to be up and about part of the day and must remain in bed the rest of the time. Group 3 includes the totally incapacitated ones that must remain in bed for the rest of their lives.

For greatly accelerated heart action and precordial pain the ice bag is useful. Tepid baths are quieting and sedative to the rapid acting heart. For great restlessness, codein, and in older children, morphin, are valuable for the required rest and beneficial sleep. Digitalis is very valuable in valvular lesions with failure of compensation.

The bed-sentence may be determined by the reaction of the heart to graduated exercise. Wilson records the circulatory reactions to graduated exercise in normal children, which she claims gives us a guide and a few general rules in the determination of circulatory resistance to exercise in the cardiac case. An allowance should be made for the element of error in the judgment of a child as to his fatigue following exercise. The test exercise consists of swinging dumb-bells, after which the pulse rate and blood pressure are recorded.

Wilson concludes that the pulse-rate is of no value in the determination of exercise tolerance, because in her series of cases the pulse reached normal within two minutes in spite of symptoms of marked dyspnea and fatigue. The blood-pressure determinations revealed some important facts. The rise in blood-pressure varied from 2 to 55 mm., with a characteristic curve consisting of a delayed rise and a prolonged fall. The maximum rise occurred in 50 to 70 seconds and fell slowly to the pre-exercise level in three to five minutes. The delayed rise of systolic pressure after work indicates that the reserve force of the heart has been overtaxed. After training, these children were able to perform a greater

amount of exercise without showing this type of blood-pressure reaction. Children who subsequently became ill showed just before their illness and later, in their convalescence, a delayed rise of blood-pressure, dyspnea and fatigue after a moderate exercise which previously had been performed without such reactions.

Seham and Seham were unable to confirm a delayed rise of blood-pressure following exercise. These observers note that collapse following exercise is preceded by a sudden drop in blood-pressure, the drop preceding nausea by from ten to fifty seconds. The drop of the pulse rate in collapse was not so striking as that of the blood-pressure. They found also that the circulatory reactions following exercise are practically the same in normal children as in children with tuberculosis and valvular heart-disease. They conclude that the tests in use today have no practical value in diagnosing myocardial competency.

Propst was unable to confirm the findings of Brittingham and White relative to the delayed rise and prolonged fall of the systolic blood-pressure following exercise in adult cardiac cases. He found that only three per cent. of his cases reacted in the manner described by these observers. In his opinion the pulse rate determination is more constant and more important as a cardiac efficiency test.

During the first year or two after an acute endocarditis, exercise should be permitted only with careful supervision and the whole life should be planned so as to save the heart.

Levinson gives the following as routine instructions:

General diet, including meat and eggs.

No limitation of fluid, unless so instructed.

No climbing of stairs, no running or jumping.

Exercise to be prescribed by physician.

Rest in bed two or three hours a day, preferably in the afternoon.

Examination of urine once a month.

Re-examination of patient once every two months.

Measurement of twenty-four hour urine two days a week.

Immediate report of the following conditions:

(a) Pain in chest.

(b) Difficulty in breathing.

(c) Blueness of lips.

(d) Swelling of face and legs.

(e) Decrease in amount of urine (less than

twelve ounces in twenty-four hours for child below six years of age, and less than sixteen ounces between eight and twelve years of age).

The removal of focal infections, namely, the removal of tonsils, extraction and repair of diseased teeth and care of diseased sinuses are very important. Colds and rheumatic attacks should be watched for. A rheumatic attack should receive very early and careful treatment to prevent any further damage to the heart. Nutrition must be kept up with nourishing and palatable foods.

Nephritis: Recovery from nephritis is usually a long drawn-out affair. It might be said that a nephritic is convalescent all of his life subsequent to an attack of acute nephritis. One of the severest forms of acute nephritis that lends itself to cure rather freely and which seldom develops into a chronic nephritis is the post-scarlatinal form. The nephritis is usually of the hemorrhagic type and even in the presence of marked edema, the patient usually responds very nicely to treatment.

Once a nephritis has been established the patient should have frequent urinary examinations and checking up of the circulatory system. In mild cases of acute nephritis, the urine should be entirely normal before the child is permitted to be up and about. Treatment during the convalescence from nephritis consists of frequent regular examinations of the heart, and of the urine in addition to regulation of diet.

Kidney complications must be sought for in every acute infectious disease, even in a simple acute pharyngitis. The latter condition may have a retarded convalescence, due to nephritis, especially if the patient is allowed out of bed too early. Examination should be made of the morning specimen and also of an exercise specimen to rule out an orthostatic albuminuria.

To prevent exacerbations in a case of chronic nephritis, all foci of infections, particularly in the teeth and tonsils, should be removed. Upper respiratory tract infections are particularly serious in the presence of impaired kidney function and should be guarded against very carefully. Drafts and chilling should be avoided.

During the convalescence from nephritis, kidney function tests are important. There are several of these with the use of dyes, urea, etc. One of the simplest and most practical is the "two hour" renal test of Mosenthal, which consists of measurement of specific gravity, salt, ni-

trogen and the excretion of water in two hour periods during the day and twelve hour night period. The patient is given a full diet containing a large amount of protein. Normally, there should be a variation of eight or more points in specific gravity between the morning and night urine and the night excretion should not exceed 500 cc.

A simpler test is that of Volhard, which consists of keeping the patient in bed and giving him, after emptying the bladder, a measured amount of water. The urine is collected at regular intervals and examined as to volume and specific gravity.

The phenolsulphophtalein test, which determines the elimination of the kidneys by the rapidity with which they excrete the dye, is not as accurate nor as simple as the above.

Blood-chemistry furnishes important information as to renal efficiency. Substances, the determination of which are important, are non-protein nitrogen, urea, creatinin, uric acid, chlorides and cholesterol.

The diet of a nephritic should contain no highly seasoned foods. Water should be furnished freely, being contraindicated only in case of cardiac decompensation. The diet should contain a liberal amount of protein, 0.5 gm. per kg. of body weight.

Pneumonia: A case of pneumonia enters the stage of convalescence upon the advent of the crisis or when the temperature has returned to normal by lysis. The stage of convalescence is important from the standpoint of complications and the return to a normal physical condition.

A rise of temperature after a return to normal should cause one to look for an empyema, which is a relatively frequent complication. Statistics vary as to the frequency of this condition. Morgan in Abt's System of Pediatrics gives the average of 8% in cases of lobar pneumonia and 5% in bronchopneumonia. The rise of temperature after pneumonia may be due to otitis media, which is encountered in 17% of cases of pneumonia.

Brooks, in his experience with pneumonia in the army, learned that soldiers could do no work safely for six weeks after an uncomplicated pneumonia, and were unable to take on full line of duty in less than three months after they had ceased to be bed patients. These principles we believe should be applied to children as well. Pa-

tients should be kept in bed two weeks after the temperature becomes normal. Dismissal from bed should be preceded by several days of sitting up in bed and the reaction of the circulation noted for increase in pulse rate, dyspnea, giddiness and cyanosis. Exercise should be permitted slowly but gradually.

Pericarditis should be looked for in left side pneumonias, with resulting empyema. Thomas and O'Hara report a case of pneumococcus type I vegetative endocarditis following lobar pneumonia, and they believe that type I is mainly responsible for pneumococcus endocarditis. Endocarditis is a very important complication to recognize, for the oversight of this condition may lead to very serious damage to the heart muscle. Digitalis may be necessary in selected cases, but the best treatment for this type of case is an extension of the rest-in-bed period. The heart involvement may be in the form of myocarditis without definite murmurs, but merely an enfeeblement of the heart tones, or there may be no manifest change in the tones. This should be borne in mind in the dismissal of every case of pneumonia, and discharge from bed should be delayed rather than take a chance on doing permanent damage to the myocardium.

Acute nephritis and pyelitis may follow in the wake of pneumonia. Nephritis is often due to too early activity in an incompletely resolved pneumonia. A trace of albumin calls for careful instruction as to diet and repeated urine examinations.

No tonics need be given to stimulate the appetite, for in the absence of complications, the appetite will return naturally.

X-ray examination of the chests in children who fail to recover completely following pneumonia is extremely important. Unresolved pneumonia, empyema, thickened pleura, lung abscess or bronchiectasis will be detected by this procedure.

Chorea: Convalescence from chorea is important with reference to the heart. Cardiac manifestations are present in almost every case, varying from simple irregularities to loud blowing murmurs. It is from the standpoint of secondary endocarditis that cases of chorea should be watched at repeated intervals. Rest should be prolonged.

Focal infections should be removed during convalescence. Removal of these during the acute

stage makes an exacerbation possible with spread of infection throughout the body. With subsidence of the acute nervous manifestations, however, the foci of infection may be removed with impunity. Upon the development of the slightest twitching of any muscles the patient should be confined to bed and treated with salicylates to prevent a further aggravation of the condition.

Rheumatism: During convalescence from rheumatism, joint pains should be watched for and upon their development, the patient should be put to bed and treated with salicylates. Any acute infection, particularly tonsillitis, requires careful treatment to prevent secondary joint involvement, which carries with it the great possibility of damage to the heart.

Diphtheria: In diphtheria, pathologic changes occur throughout the body, particularly in highly specialized tissues, such as the heart, kidneys, nerve, muscle and liver.

The heart is the seat of the most frequent and serious attack by the diphtheria toxin. The cardiac changes are usually manifested during convalescence, though they may become apparent during the course of the acute infection. The ultimate result of myocardial involvement depends on how badly the cardiac mechanism is disturbed.

The development of myocarditis in diphtheria is largely dependent on the protection the heart receives during the course of the disease and during convalescence. The mere suggestion of a cardiac murmur should call for prolonged and supervised rest. Complaints of dyspnea, precordial pain or pain referable to the upper abdomen, cough or weakness, should direct one's attention to the cardio-vascular system.

On examination of a case developing myocarditis, the pulse is found to be slow, often as low as forty, the cardiac impulse and tones are weak, the heart borders are slightly increased, and there may be varying degrees of murmurs, with accentuation of the second pulmonic sound. The pulse is irregular and weak.

McCulloch recommends the use of the electrocardiograph for detection of cardiac changes in diphtheria. He found that the electrocardiographic study aided materially in detecting cardiac complications. Cardiac supervision is particularly important in the cases that receive antitoxin late in the disease, or in cases that have received an insufficient amount of antitoxin.

Heart complications may appear in a case that appears to be mild.

Diphtheritic paralysis is the most frequent variety of multiple neuritis in children. The frequency of this condition is variously estimated as 5 to 20 per cent. Paralysis is more likely to be encountered in severe than in mild cases. Paralysis occurs usually about four or five weeks after the throat has cleared up, occasionally during the second week. The most frequent variety is paralysis of the soft palate, characterized by regurgitation of food through the nose, nasal twang to the voice and inability of the palate to move in deglutition and speech.

Paralysis of the eye muscles is next in frequency. This is characterized by strabismus, and reaction of the pupils to light, but not to accommodation. Involvement of the muscles of the extremities is frequent and is characterized by the development of flaccid paralysis with loss of reflexes.

Diphtheria antitoxin is useless in this condition. The damage to the tissues has already been done and the restoration is not aided by the administration of antitoxin. Fortunately, unless they involve the diaphragm, these paralyzes are not of a serious nature and recovery is spontaneous in the course of a few months if the general nutrition is maintained. Sunshines hastens the recovery. In paralysis of the palate, feeding by gavage is very often necessary.

Repeated examination of the urine during and several weeks following an acute attack of diphtheria is warranted because of the frequency of a toxic nephritis.

Poliomyelitis: Rest of the affected muscles in such a position as to prevent contractures is the first consideration during and immediately following the acute stage of poliomyelitis. The use of sand-bags, the application of casts, splints and bandages are all used to prevent as much as possible the development of deformities.

After the muscle pain has subsided, massage and electrical stimulation of the affected muscles should be begun. With efficient massage, hydrotherapeutic measures and electrical stimulation, muscles that seemed beyond recall may often be returned to their normal function.

The general condition of the patient must be maintained by nutritious food, sunlight and tonics, of which strychnine is of value. Where there is complete loss of power of certain groups of

muscles, the restoration of muscle balance by tendon transplantation is valuable. Where there is loss of muscle power in the vicinity of a joint, function may be increased considerably by making an artificial joint. Industrial school training for permanently deformed children is of great value, from an instructive and commercial viewpoint.

Scarlet Fever: Repeated examination of the urine during the febrile period and during convalescence is essential. Scarletinal nephritis is most often of the hemorrhagic type, although simple albuminuria is not uncommon. The type and severity of kidney involvement depends greatly on the character of the epidemic, for the complications of scarlet fever have seasonal variations. The prognosis in scarlatinal nephritis is often good, even in cases with marked edema. The pulse rate, heart tones, and the area of cardiac dullness must be observed at frequent intervals, and if a heart complication is at all suspected the period of rest in bed should be prolonged.

During convalescence from scarlet fever, discharges from the ears, nose and suppurating glands should be properly cared for and quarantine maintained until such discharges have ceased. Chilling, especially of the abdomen, should be cautiously guarded against.

Which diet to give in scarlet fever is a mooted question. Formerly a milk diet, especially during the first week, was considered absolutely necessary. More recently, the diet of choice is considered to be one consisting of cereals, vegetables and vegetable soups, meat gravy, fresh and cooked fruits, and milk rather sparingly.

Pertussis: Convalescence from pertussis is very often long drawn out. The acute stage and the convalescent stage have both been very materially shortened by the use of the vaccine, especially if it is administered early in the course of the disease, and in large enough doses. X-ray has also been credited with shortening the disease.

Cough will often persist weeks after the characteristic whoop and vomiting has ceased. This cough is usually due to enlarged bronchial glands or to the development of a chronic bronchitis. A very important consideration in post-pertussis coughs is to determine whether or not a tuberculous focus has been lighted up. The Von Pirquet test, x-ray examination of the chest and observa-

tion for afternoon rise of temperature are important procedures.

These patients, because of the anorexia and vomiting, should be given highly nutritious foods in small bulk and at frequent intervals. Fresh air is very important and if the weather permits, the patient should sleep in the open.

Measles: Measles is the commonest of the infectious diseases of childhood and convalescence is uneventful, except in a small percentage of cases.

The chest should be protected against draft and chills, because of the possibility of a secondary bronchopneumonia. Fresh air, however, must not be excluded. The urine should be examined a few times to rule out nephritis.

A cough following measles bears watching. Although, in most of the cases the cough is due to sub-acute and chronic bronchitis, the possibility of tuberculosis of the bronchial glands or of the lungs must be considered, as in the case of pertussis.

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ABUSE OF MEDICAL CHARITY*

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The great mass of people and even philanthropists have paid very little attention to this subject. Yet, interwoven with this is the same economic problem of how people can take advantage of others. The sad part of this is, however, that it is not the poor who are taking

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advantage. At this most prosperous time of business in America, we seem to have more need for charity, especially medical charity than any other period in its history. Is it not surprising, therefore, that such a thing should exist?

In 1922 thirty million people in the United States visited dispensaries¹. Imagine, if you please, that this means one out of three of our population. We look at Europe and we think there is an awful lot of suffering over there, but I hardly think that even in Europe one out of three people apply for help. In Cook County alone in 1923, 200,000 people applied to the county agent for help and most of this is, of course, for medical charity². This does not include the many people who applied for charity to other organizations.

Do not misunderstand me. I am in favor of charity—the real charity that comes from the heart. Now-a-days the word “charity” is used a great deal. You can more easily get money out of people than deeds for charity. About a year ago I had to advertise for some skin for a little boy who had burned both legs, and his legs were about to be amputated³. I tried to get some skin from some of my philanthropic friends, who gave thousands of dollars to various charitable organizations each year, and I could not get one square inch. I needed over 20 square inches and I interested the Hearst papers, who played the thing up, and the next day I had more volunteers than I needed, and every one of these volunteers, both male and female, were wage earners. There was not one employer who volunteered to give even the smallest amount of skin, but they would give money. They will give money to get rid of you, and that proves that the charity that is given, especially that of a medical nature, is the morphine that the incompetent doctor gives to the patient to relieve his pain and take his attention away from the real cause of that pain. It was never more true, therefore, that charity is the cloak of sin.

We have in Chicago 110 hospitals for the sick. Only 38 of these are organized for profit. Do all the medical eleemosynary hospitals do real charity? They do not. It is only a scheme to get out of paying water taxes, income taxes, and all other kinds of taxes, and who has to pay the bill? We do.

And then, there are the industrial insurance corporations. These are supposed to give the

working man treatment, and they are being paid to do it. You pay them. You pay them out of your earnings and you also pay them out of your taxes. You are entitled to be taken care of in a private hospital by your own physician as if you hired him yourself, like any other free American citizen. Are you thus treated? Most of these corporations are not even incorporated in this state and take advantage of the County Hospital and other charity hospitals, to whom they pay nothing. In other words, they are getting money from the employers and from you for insurance, and they have this done for nothing, and then they do not give you your compensation without a trial. If you do happen to go to a private hospital, they will not allow you to have your own doctor to take care of you. This is a free country and yet, they make you take whatever doctor they want.

What kind of a doctor do they want? They want a doctor who will take care of you at the cheapest possible price and they do not care whether you get well or not. With them it is purely a financial arrangement. There is scarcely one corporation doctor who is a high class man. He could not work for the amount these insurance corporations are willing to pay, and they do not pay these doctors as much as the average laboring man gets. You can readily understand then, the kind of a doctor they do get.

But aside from all this, these institutions that give charity claim it is for the poor working man. They do not want to make paupers out of them, so they charge a small fee. If it is really for the poor working man, why do they not keep their dispensaries open in the evenings, so that the poor working man would not have to lose a day from work, and why do they not keep open on Sundays and holidays? What kind of a charitable act is it if they make you quit a day's work to have a finger dressed or to be examined for a cold or cough? And then you lay around there for three or four hours to get ten cents worth of incompetent attention—and they call that medical charity. If you will go into the average dispensary waiting room, you will always find a crowd sitting a great deal closer than we are here, and the room is ill ventilated. You come in contact with all kinds of diseases, and somehow or other these dispensaries get by, and people who are foolish enough to go there, waste

their time and come in contact with contagious diseases and lower their vitality in ill ventilated rooms to get a few minutes of incompetent medical attention. Well, they get all that they pay for, and more.

There is hardly a dispensary in the City of Chicago that is running legally. The ordinance states that no dispensary is allowed to charge more than 15 cents. Since the war, however, we have forgotten all about laws and ordinances, so we let things go as they choose, and the dispensaries are charging 50 cents, one dollar, and even more, for drugs and other things, although, to repeat, the Chicago ordinances say that they should not charge over 15 cents.

The dispensary evil, however, is by far the lesser evil, because if the people choose to go there, let them go. They get nothing for their money and they lose a great deal of time, and what is worse, subject themselves to the investigation and visits to the house of young Social workers. Why they call them social workers I do not know, as they are far from sociable beings. Nevertheless, they send these young girls into a family to investigate all about their married life, and everything else of a private nature, and all of that for a dime's worth of charity that they might give them. This, however, is as it should be, for in every medical charity you will find that everybody gets a salary. The scrubwoman, the social worker, the office help, errand boys, bell hops. Everybody gets paid, except those who do the real work—the doctors.

Doctors have not yet learned the value of their time, which by the way, is their only asset. A doctor, as soon as he gets a practice of his own, and knows how to keep his practice, does not go to the dispensary any more, because he has already had his experience on the poor patients who frequent these places. If a doctor wants to try out anything new, the dispensary patient is the victim; or if he wants to improve his own technic, he experiments on them.

The dispensaries say, "Why we have the biggest men in town on our staff." I will say they have, but they do not go there and treat the patients. They have assistants who do that for them. If the patient is able to pay, however, that is where the big man comes in, and the assistant must refer the pay patient to the big man, or else lose his opportunity for experimentation.

I notice that the Central Free Dispensary of Rush Medical College, for the very first time in its history has sent out cards for donations. The only way a dispensary should be run for the poor working men, is by the working men organizations themselves. They can afford to hire a doctor, not because he has a name, but because he is going to give these people the services they ought to get, and that physician comes regularly and will be responsible to you.

I do not see why people go to a dispensary at all. They could go to *any reputable physician in their neighborhood and tell him that they are unable to pay and he will treat them free of charge*, and take care of them as human beings and not as a case for the purpose of statistics. Furthermore, he can speak their language and can sympathize with their environment, as he lives in their neighborhood and will give them individual attention and not treat them like the dispensaries do, in wholesale quantities. That is one thing that can not be done, and for that reason I am opposed to State Medicine. Human beings are different, and can not be treated wholesale. Besides all the propaganda for the wholesale treatment of the human being (like cattle) is directed at the wage earner. It will not affect the man who can buy and pay for what he buys. This alone is sufficient reason for the wage earners to be opposed to State Medicine. Besides, there are many things about each one of us that we do not want everyone to know. I believe every one in this audience has some secret ailment, or knows of some one who has some secret ailment that you do not want everyone to know. If, however, you will be treated by government physicians, your secret is public property. All the religious organizations get their converts chiefly through medical charity.

The greatest evil, however, is at the hospitals. If you are taken suddenly ill and removed to a hospital that gives ten per cent charity (which is all the charity they are obliged to give according to the law) your freedom is at once gone, unless you can afford a private room. For most of these so-called classy public hospitals are very much private. They have what is known as a closed staff and you must be treated by one of the staff. I say that these hospitals are supposed to do ten per cent charity. If one would look over their books they would find that many

of these hospitals do no charity at all, but claim ten per cent so as to get out of paying taxes, insurance, and everything else.

Suppose you are injured by an automobile. You are removed to one of these so-called charity hospitals. Your case is at once jeopardized, because it is a public hospital and the corporations have access to their records. These corporations know that, and you do not. Again, if you are a patient in a hospital organized not for profit, you have no protection whatever, even if you are in the highest priced room. That means, if you are injured in the hospital, such as burned by a hot water bottle, burned by carbolic acid, or in your delirium you jump out of the window, or you fall down the elevator shaft, you can not recover damages in this state, because you were an inmate of a hospital which was incorporated not for profit, even though you had paid them well for a private room and special nurse. If, however, you are injured in a hospital organized for profit, you can sue and win, and the larger the hospital is, the more liable accidents of that kind are to happen.

At the County Hospital they are obliged to give the indigent services free. They do give it free, and yet, why should not they permit the patients to have their own physicians, even if they are poor patients? If a physician is one of your choice, he is bound to do the right thing by you, because he knows your friends and your people. It is like trading in your own neighborhood. Your neighbor must give you a square deal or you will never trade with him again, and he depends on your business. Furthermore, should you not get a square deal with your neighbor, all the other neighbors will soon find out about it, and this personal contact counts even more in the treatment of the sick.

In the County Hospital they should at least have a paid staff. They have a voluntary staff, and it is a peculiar kind of voluntary staff. They have to take a civil service examination for a period of six years. Civil service, as I understand it, means for life, and it means for pay. Regardless of how competent a man is, if he is working free of charge, there comes a time when he will say, "Oh, hell, I am not getting anything for this, I am going out to a golf game." Why not? If he should do wrong, the Board can not say to him, "Now if you don't do better, or if you don't come regularly, we will get someone

else." The physician will say, "Well, go ahead, I am not getting paid for this, and I have all the experience I want." And if the complainant goes to the board, they will only say, "Well, what can we expect?" "We can not say anything to him. He is doing this free."

Now let us see how this free business affects the 2700 patients there. A patient is brought in. He needs an immediate operation. The average wait of a patient from the time he comes in until he is operated on at the County Hospital is eight days. Eight days—and during that time a great many of these poor unfortunate people die. If we had a paid staff there they would have to give everybody prompt attention. There are two kinds of patients being treated there. One is the poor man who does not know anybody and is friendless. He thinks he has to wait. The other man is the man who has a private room. They have on every floor a number of small private wards, which are presumably for extraordinary or very serious cases. The serious cases turn out to be people who have a "pull" and they use it to get a private room and then get a special nurse and pay that special nurse \$56 a week. Now, if a man can pay \$56 a week he does not belong at the County Hospital, or if a man can pay anything, he does not belong at the County Hospital.

We have at the County Hospital a staff of 63 volunteers. The County Board claims it has no money to pay a staff. It has for lawyers, architects, laborers, scrubwomen, and for everybody else in the place except the people who are required to do the work—the doctors; and it claims they cannot pay these. If in the place of the 63 men who are supposed to put in six hours a week, (two hours three times a week) they would have only 12 men and pay each one of these 12 men \$5,000 a year—that is only \$60,000 a year—we will even say they have to pay them each \$8,000 a year—that is only \$96,000 a year—they would be saving the average of eight days that each patient has to wait before he is operated on. Some patients wait two or three weeks. Some go in and never see an attending physician.

It would really be a saving to the county to have a paid staff and it would also be a place where scientific work could be done and many lives could be saved.

The following could not happen. A patient has to be operated on and he is scheduled for

that morning. The attending physician comes in to operate on that patient, when he receives a telephone message. He is wanted to call his home, which he does, and finds that one of his wealthy patients needs him. Is he going to operate on that poor man who is starved, cleaned out, and all prepared for operation, or is he going to get a three or four or five hundred dollar fee? I will leave it to you to judge which he will do. Now this happens to some of your poor patients. They are prepared three or four times for operation before they are finally operated on and what happens? When they are finally operated on, their resistance is so lowered that bad results follow. If we had a paid staff, not only would the poor people be well taken care of, but also the County Hospital, with 2700 beds, which has not up to this day brought out anything of scientific value with that great wealth of material and with the opportunity of developing the greatest specialists on earth. If we had a paid staff, a man could be trained to do nothing but a certain operation, and he could so develop the technic of that operation that there would not be a better man in the world, and yet these opportunities go by because the County Hospital as well as the Department of Health, and other organizations of this town are used for one thing—the aggrandizement of political plunder, and for the advertisement and experiment of a few doctors.

We have our school inspectors. I believe there is not one thing more important in the work towards the future of this great country than to have proper school inspection—a school inspection that will inspect every child and the first place where they find that a child is abnormal is in school, especially among the working classes. The poor mother is busy. She has her household duties and if she is not busy, she can not pay attention to her child properly. I claim that school inspection is important enough to occupy a man's whole time, and the Department of Health in the previous administration, when they had this brought to their attention said, "We agree with you, but we have no money to pay out for inspectors." I said, "Doctor, you have. We have 400 school inspectors and they each get \$125 a month. They are presumed to put in from 9 a. m. to 12 m. each day and if they average an hour a day each, I will eat my hat. Now, in place of having 400 school inspectors at \$125 a month, have 100 school

inspectors at \$500 a month. It would not cost another dime, and let them put in all of their time and not go looking for graft. If you underpay anybody, you are encouraging graft. All of these school inspectors use that job as a means of getting graft. If they were getting a decent wage and had to do school inspection and that only, they would do better work." Here, in the second city in the United States, with 20 years of school inspection, not one thing of scientific value has been given to the world. All because it is done in a so-called "charity" manner.

Now, we will get down to the real evil of charity. We speak about graft. And let me tell you there is not any money graft about this at all. I am not accusing any one of graft. It has existed for years, because years ago hospitals had to be "charity." Years ago the only people who went to hospitals were those who could not be taken care of at home. We are still in the same position as regards the management of these hospitals. Twenty-five years ago there were less than fifty hospitals here. Today there are 112. Now what happens? People give money to a hospital and they imagine that this money goes for the poor. Well, if it did I would be absolutely pleased, but it does not. Abraham Lincoln said that we were all born equal, but when it comes to a hospital—except at the County (at the County they are all equal) they say "This is the charity ward, and this is the private ward." They also ask, "Are you coming in to see a charity patient?" "Well, here's your entrance, but the private entrance for private patients is through this marble hall, and our private patients can order up what they want to eat that they can have." We think we are living in a country of equality.

If you give \$1000 to an eleemosynary hospital, how much of that \$1000 do you suppose goes for the real poor patient? It does not average more than 7% that ever gets to the poor. Do not think that I am putting out here a statement to make you think there is graft in money. No one gets that graft. That is, nobody in particular gets it. They build hospitals like they build jails.

Every time they build a jail they have to fill it up because the management must come in the following year and say, "We need more room." Why, you all voted recently on a bond issue to have a uicer jail. Why the deuce do criminals

need anything nicer than they have? I would rather spend that money on public schools and let the jails be not as nice, and then nobody would want to go there. They build a hospital and they say, "We will have a few wards for the poor." The smallest part of the hospital is for the free wards. The largest part of the hospital is for the private rooms. Why should they want so many private rooms and so few wards for poor patients, and let me tell you that I believe that Russia, in its worst time, did not treat people as mean as we treat our poor people in our wards. I believe that if there ever was a patient that ought to be in a private room, it is the poor patient. The only rest he ever gets is when he is sick in a hospital, and the only rest a woman gets is when she is in the hospital having her baby, and that is the truth, and during that time she ought to rest. She ought to enjoy her rest and it is a crime to put the poor people in wards, where while one patient is having his meals, another wants a bed pan. Now, how could you eat your meals when your next-bed neighbor is using a bed pan, and that happens every day. I believe that all hospitals should have private rooms only. A criminal gets a private cell, and here they bunch up a lot of poor people in one room, and each one has to enjoy the smell of the other. Of course, two beds are all right if they are both getting better. Some people like company, but I believe if they really meant to do these people good, they would treat the poor patient just as well as the man who pays, and the fact is, the man who pays should get what he is paying for. If he wants anything cheap, let him have it, but if we are giving these people the thing that they need let us give it to them whole-heartedly.

In almost all hospitals that are not paying taxes, and who, therefore, are tax dodgers, and who do not protect their patients, they have beds from \$1.00 a day up and they ask no questions. If you come into such a hospital and say, "Well, I want a bed." They will ask, "What kind of a bed do you want?" "We have beds from \$1.00 a day up." You look at the dollar a day beds and the two dollar beds. You think you want to save a little money (and that is the poorest time in the world to save money, when you are sick. Let it go, because you might die and leave it all to someone else and if you get well, you can make more.) You take a two

dollar bed. The average cost in the swell hospitals where they have these charity wards is \$6.00 a day in round numbers per patient. Who pays the other four dollars? Who is it? That money is taken out of the money collected from the public for the poor. Now, here is a patient who gets everything he wants. He can have his own doctor because he gets 80% charity. What happens with the destitute poor? They say, "Do you want a pay bed or charity?" "I can not pay anything, I am a poor man." "All right, sit down." A girl comes in and takes his history from the day of Adam, and all the time he can hardly sit, and after she has all the information she wants (unless it is an emergency case, and that is up to that little girl) they say, "All right, now you go home, and we will investigate, and if we find that you are entitled to a bed, we will put you on the waiting list." And they do. And many a patient dies before they have room. Now it so happens that it is against the rules for a charity patient to be put into a private ward. You can not climb over that, and if it happens that the charity ward has to be cleaned and repainted, it is closed up altogether, and then every poor patient must wait. Now, here is the injustice of the whole thing. A man comes in and says he is a poor man. He has to wait, but the man who pays 20% of what it costs and receives 80% charity gets in (in a swell hospital the private rooms only cost \$30 a week and up) and it costs them six times \$7.00, or \$42.00. Quite wealthy people go there, and I can show you men whose names are on the charity list as givers, who are also on the hospital list in wards beds, thereby they have received a part of the money that they have given, so they give with one hand and take back with the other. Now, I do not blame the givers for that. If they knew that they were getting charity they would say, "Well, I want to pay." Every self-respecting man wants to pay his way, and most of them do, and if they knew that they were receiving charity they would say, "I do not want it." Why, then, does not the management tell the people, "Yes, you can have a two dollar a day bed, but you are receiving \$4.00 a day charity." In all of these hospital buildings you enter, the administration part is wonderful. Marble halls, Italian marble, beautiful oil paintings, mahogany furnished waiting rooms, and a swell private din-

ing room, and a beautiful Board of Directors Room, used only once in a while; but the rooms that are for the inmates, the rooms that are for the purpose for which the hospital has been built, and even the operating rooms, are very mediocre. You can not get well by these marble halls, and you can not get well by the Board of Directors' room, which is only used once a month, but you do get well in those other rooms and those are the rooms, if they really meant to give charity, that ought to have every attraction, everything in there to make them beautiful, and to make those sick people as comfortable as possible.

Now, there is an economic side to this question, too, and I believe you will be interested in that, and that is, there are certain corporations that give \$5,000 a year to a certain charity hospital, and they are played up in the newspapers daily. They give \$5,000 a year. They employ in this town over 80,000 men and every one of these men are given medical care free of charge. They have 19 physicians who visit your homes, and if you are ill—let me tell you something about that. These corporations have a so-called social service system which is an organization of spies, because who pays these social service workers? Do you pay them? No! The corporation pays them. Why? Because they are going to get something back, and what is it they are going to get back? As it often happens, a poor girl has a headache and does not want to go to work that day. She can not. In the afternoon she feels a little better, and she goes out for a little walk. Miss Social Worker comes in. "Yes, Miss Jones, she is not feeling well." "Well, where is she?" Well, if she is not feeling well, she has to go to the doctor and she has to pay the doctor, but that is not all. In the times when labor is scarce, these corporations who are giving \$5,000 to a hospital get about a half million back in the year, because they tell their men, "We take care of you when you are ill so, therefore, naturally, you would rather work for them than some of the other corporations who are unable to give \$5,000 a year and they can not get as many working people as this one does, and that is what this corporation does. It gets a half million back out of \$5,000 a year, because their employees are taken care of free. Well, out of

80,000 hands, it is easy enough to get back a half million.

Some years ago I wrote a pamphlet about 64 pages on the same topic⁴. I could not possibly quote it all in an hour which is allotted to me, and my time is almost up, and I ended my article in this way, and all the Chicago newspapers commented on it editorially. "If all the hospitals and dispensaries were closed today, would the poor suffer? They would not. On the contrary, they would be treated by a physician in their neighborhood who could speak their language and who understood their environment and sympathized with their way of living, as a patient, and not as a case for the purpose of statistics. There are 73 dispensaries. Do you know that in the average dispensary you will find that practically the same people go to a half dozen of these places because they are free. We do not do any good by it. There is only one way to do real charity, and that is, let it all be done by the government. The poor who are given charity are just the working classes. It is true they have exploited them, but they are willing to give a little of it back. They have great power with the press, and with the public, and the only way to do is to have your charity run by the government, and let everybody get equal attention. I am opposed to charity the same way as I am opposed to sectarian education in the schools. Absolutely against it, because it makes class and we are against class in this country. One is a graduate of Harvard, who is a little better than the one from Yale, and the one from Yale is a little better than the one from Princeton, and all of that. If all of the colleges were run by the government, each state having its own university, there would not be any need for class. One would be just as good as the other. And how do we get class in this country? Only by one way. By exclusion, and all of the charitable organizations are known, not by how much charity they do, but who is at the head of them, and they only remain at the head because they are the wives of the leading business institutions who have big ads in the daily press and control it because if they do not write what they want they take their ads out, and if they take their ads out of a newspaper, it can not exist, and I hope that the day

will come when the government will run its newspapers." I thank you.

Notes:

- 1—Journal, A. M. A., Sept. 27, 1924, P. 985.
- 2—Chicago Tribune, Jan. 1, 1924.
- 3—Chicago Herald-Examiner, May 22, 1923.
- 4—Chicago American, May 22, 1923; Illinois Medical Journal, November, 1916.

A SUDDEN DEATH FROM ARSPHENAMINE

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To the dermatologist and syphilologist constantly in touch with the various manifestations of syphilis, there is occasionally an accident for which, even after careful investigation, there seems inadequate explanation. That the death of this nature is not of common occurrence is shown by Decrop and Salle¹ in which they record 77,968 injections with but three sudden deaths. By sudden death they refer to instances where death follows within thirty-six hours after the administration of the drug.

Viets² in the report of the Salvarsan Committee of the British Research Council, reports that about one half of the reported deaths from salvarsan were due to hemorrhagic encephalitis. Of course this report takes account of both those of sudden occurrence and of the belated cases. The case we wish to report, however, does not fall into this list of fifty per cent as there was found no indication of hemorrhagic encephalitis at the time of autopsy.

According to R. C. Shepherd³ in an analysis made by Major Elliot in the British Military service, those cases of death due to the arsphenamines closely resembled deaths due directly to arsenic oxide poisoning with the following residual content in the various organs: kidneys, 0.2 mg. per 100 grams total weight; the liver showed but 0.10 mg. per 100 gms. weight, while the spleen contains 0.20 mg. per 100 gms. weight, and the bones disclosed the same amount as the spleen. This is interesting, inasmuch as we usually look to the kidneys and liver for our analytical demonstration of residual arsenic in such cases.

LoVullo⁴ contends that all of these crises and fatal terminations of the administration of the

arsphenamines are simply due to bad preparations and that autopsy reports show proof of these statements. I feel however, that inasmuch as one frequently has a reaction from one unbroken and to all appearances perfect tube while he does not have reactions from other tubes of the same lot, that this cause cannot always be the one responsible for such accidents.

Van Wessen⁵ reported a case in 1922 in which the patient had been given twenty intravenous injections of neoarsphenamine at weekly intervals, divided into several courses. The patient had suffered no reactions until on the fifth day after the last injection, when he was taken to the hospital for febrile gastric disturbances and headache. This was followed by pain on the right side, jaundice, convulsions, hemorrhages into the skin, coma, and death on the fifth day. While this case did not conform to our sudden deaths as considered in this paper, the similarity of the autopsy findings warrants it a place here. Necropsy showed some congestion of all organs, especially the liver and some disseminated diffusions of the brain, but no macroscopic lesions of any organs. No liver arsenic was found even after careful examination. There were no spirochetes in the liver. The cause of death he says, was thus a mystery, but probably due to a combination of several causes, and added to this an individual predisposition which as yet cannot be foreseen.

A case belonging to this group came under my observation recently. Mrs. E. B., a married white woman, thirty-five years of age and a native of Michigan. She was admitted to the dispensary of the Chicago Memorial Hospital, June 27, 1924. Husband was a known syphilitic at the time of her admission. A genital sore had been previously noticed on April 20, while she was being treated by another doctor for a Neisserian infection. A darkfield was made and the sore proved to contain spirochetes on May 19, 1924. About June 20 the patient began to have an eruption of the skin over the shoulders and hips. Upon admission to the dispensary (June 27) a few lesions were noted also on the arms. This eruption was a maculopapular secondary syphilide. At some time previous, the exact date was not known by the patient, she had been given one injection of neoarsphenamine. At the time of entry felt well, and reported that she had suffered an operation for an abscessed kidney some years previous, and that she had passed through attacks of influenza, typhoid, measles, and frequent colds, without, to her knowledge, any serious complications.

The examination at the time of entrance disclosed a reddened pharynx with a fine rash on the uvula and extending upwards onto the soft palate. There was a

generalized adenopathy with a maculo-papular eruption over the shoulders, arms, back and hips, while a few of the lesions were pustular. Those pustular lesions were superimposed upon a reddened base, with a slightly umbilicated tip, resembling quite closely the eruption of chicken pox. The blood Wassermann was strongly positive.

Potassium iodide medication and mercury rubs were begun and after two weeks of this treatment, neoarsphenamine was exhibited at weekly intervals, the iodides being stopped, but the mercury rubs still continued. By the middle of July the lesions were rapidly clearing.

Her intravenous medication consisted of two injections of 0.3 gms. and one injection of 0.45 gms. neoarsphenamine at weekly intervals. Her veins were small and difficult to enter and it was then considered best to use sulpharsphenamine intragluteally. Four 0.5 gms. of sulpharsphenamine were given on August 7, August 2, Sept. 5 and Sept. 17, 1924. She complained bitterly of pain from the gluteal injections and since examination had shown that there were no nodules in either gluteal muscle it was deemed safe to return to neoarsphenamine intravenously.

She was given 0.6 neoarsphenamine (Metz) at 3 p. m. October 3, 1924. There was an immediate reaction and the patient went into coma from which she could not be aroused. The face and lips were cyanotic, and the body became cold. 1 mil. (cc.) adrenalin chloride 1:1000 was immediately administered subcutaneously, but without any visible result. Heat was applied to the body, 1200 mil. (c.c.) normal salt solution was given by hypodermoclysis, and five minimums of a 1:1000 adrenalin chloride solution subcutaneously was given every hour. 100 mil. (c.c.) of blood was withdrawn by venesection. 0.75 gms. sodium thiosulphate was given intravenously. A spinal puncture was made which showed increased intraspinal pressure. At the suggestion of Dr. George L. Brooks, one ampule of Digi-folin was given every six hours, and more heat was applied externally to the body, but in spite of all efforts the patient died at 3:10 p. m. on October 4, 1924, or about twenty-four hours after the administration of the drug. At time of death the temperature was 102 degrees, pulse 160 and respiration 44. There was at no time from the beginning of the attack till death, any discernible icterus.

The case was subject to the disposition of the Coroner and an autopsy was performed by Dr. William Bloom and many of the microscopic sections were afterward studied by Dr. Oscar T. Schultz, from whose report I thankfully copy the following: "Autopsy was performed two hours after death.

"On removing the calvarium the dura strips easily and is not adherent to the lepto-meninges. The arteries at the base of the brain are thin walled and free from sclerosis. The ventricles are apparently normal size. The ganglia at the base are apparently free from change. The pineal gland and the hypophysis are apparently normal. The former is not calcified.

"Microscopic.—Section through the cortex, there is no interstitial edema. The only abnormality that is noted is pigment in the cytoplasm of the ganglion cells.

The pineal body reveals no abnormalities. There are numerous particles of brain sand. The hypophysis reveals no abnormalities except that in the pars intermedia the colloid spaces are lined by an irregular hyperplastic epithelium.

"The Heart.—There are innumerable bright red spots scattered beneath the epicardium and occasionally there are some slightly larger ones of a bluish red color. The pulmonary artery is incised in situ and is free from emboli. The myocardium is soft. The valves present no abnormalities. On section, here and there, are a few fine silver white streaks. Beneath the endocardium of the left ventricle there are a few fairly large red areas of hemorrhage. The aorta is very elastic and contains only here and there small yellow atherosclerotic plaques. The coronary arteries are free from sclerosis.

"The Liver.—Macroscopic.—The liver is about normal in size, it is dark brown in color. On section the organ is more or less uniformly brown. On the right inferior border of the liver there are numerous bright red areas one to two millimeters in diameter; these give the impression of being confined to the liver lobules rather than an indiscriminate hemorrhage. On section these red areas do not extend more than one mm. into the hepatic tissue. The lower portion of the right lobe shows a more or less uniform yellow gray parenchyma.

"The Liver.—Microscopic.—In one section the nuclei of considerable numbers of the liver cells show chromotolysis. Others are larger and show a reddish stain. The nuclei as a whole vary markedly in size. There is considerable pigmentation in the cytoplasm of the liver cells particularly near the central vein where the liver cord cells are vacuolated and pale staining, sometimes almost a homogeneous mass in which an occasional eosinophile is seen. In another section the appearance is essentially similar with the addition that there are large areas of fibrous tissue in which there are lymphocytes and eosinophiles and in which bile ducts are extraordinarily numerous, probably proliferated. In these areas a few necrotic deeply pigmented cells are seen. Surrounding these areas is a zone of vacuolated liver cells not having a central vein, beyond which the liver cells are compressed to form a pseudo-capsule and appear as in the previous section. In some places the bile ducts appear as if arising from compressed liver cells. It is quite possible that this condition might have arisen from disintegration of liver cells due to an acute toxic agent, with resulted proliferation and regeneration as illustrated by these findings. We do not think that this is definitely a luetic change but the possibility of its being luetic rather than of extraneous toxic origin must be considered.

"The Kidneys.—Microscopic.—There are several triangular areas beneath the capsule with atrophic and concentric fibrotic glomeruli surrounded by a lymphocytic infiltration and in the tubules around which are numerous hyalin casts. Elsewhere the convoluted tubules show a marked cloudy swelling and pyknosis of the nuclei of some of the epithelial cells. The glomeruli are well filled. There are some adherent to the cap-

sular epithelium with exudation into the capsular spaces. The blood vessels throughout are remarkably congested.

Notwithstanding, therefore, careful search of the organs macroscopically and microscopically, there was no definite cause of death discoverable. Of course one must view the change from neoarsphenamine to sulpharsphenamine and back to neoarsphenamine with a little question of possible complication, but in my experience I have done this many times without untoward results and so we feel that we must with Van Wessen⁵ conclude that it was due to individual predisposition, the exact nature of which we do not yet know or that it must be charged to some toxic agent produced without or within the body, but the physiological or chemical nature of which we do not know, and that at present at least such result cannot be foreseen.

104 S. Michigan Ave.

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DANGER OF DISEASE TRANSMISSION THROUGH DENTISTRY PREVENTED THROUGH NEW STERILIZER DEVICE

P. J. L. NEMMERS, PH.G., D. D. S.

CHICAGO

A forerunner of even greater safeguards in the practice of dentistry is an instrument eliminating practically all danger of infection from the dental drill or holder. The dental drill is used continually in the mouths of patients. Sterilization is almost impossible under present working conditions. Dental methods inhibit the disconnection and sterilization of the dental hand piece or drill holder, for each individual patient upon whom the dentist works. As these sections of dental tools come into contact with patients' mouths, the profession has found for years annoyance, trouble and anxiety over proper and practicable sanitation and sterilization in their use.

All other implements employed by dentists in patients' mouths may be sterilized, except the

hand piece, or drill holder. Seldom if ever is the drill holder sterilized for each patient, as is the habit with other tools. Excuse for this lies in the mechanics of the tool. In the hand piece or drill holder are revolving parts and bearings that require lubrication in oil. If this tool were sterilized by boiling, or by immersion in gasoline, alcohol, or any other solution similar in constituents or results, these bearings would be spoiled and the hand-pieces gummed up.

Gasoline, alcohol or allied solutions used for such sterilization would ent the oil and dry the running bearings. Mere wiping with alcohol or kindred solutions does not sterilize the drill holder. Such wiping or swabbing falls short of removing all disease spores, as is evident even to the laity, considering that a fatal disease germ can live on an area the size of the prick of a pin, or less. Now drill and holder are being inserted continually into the mouths of successive patients, or are in the hands of the dentist, whose fingers are moist from saliva from the oral cavities in which he labors. Value of a practical, adequate sterilizing device for the hand piece or drill can not be over-estimated.

After twelve years of experimentation there is placed upon the market "Nemmers' Essential Hand Piece Sterilizer." By using this innovation the drill is sterilized thoroughly after each patient. There is achieved absolute avoidance of the chance that the drill, becoming infected in the mouth of one patient, may carry a germ into the mouth of the next patient, or of any other patient.

"Hand piece" explains to the laity the dental drill holder. "The Essential Hand Piece Sterilizer," is all that the name implies. This sterilizer protects the drill holder from the dust as well as from other contaminating agents of the air. To sterilize this hand piece or drill holder thoroughly requires a process such as is afforded by the Nemmers' invention. Any other method results in an expenditure and loss of time and spoiled tools. Ordinary methods of sterilization applied to the hand piece or drill, would call for the subsequent application of an oil and would make necessary the dis-assembling of the various parts, after use in the mouth of each patient. The Nemmers sterilizer disinfects completely the oil and the entire hand-piece or drill-holder, at the same time, and without removing any part of the instruments in use.

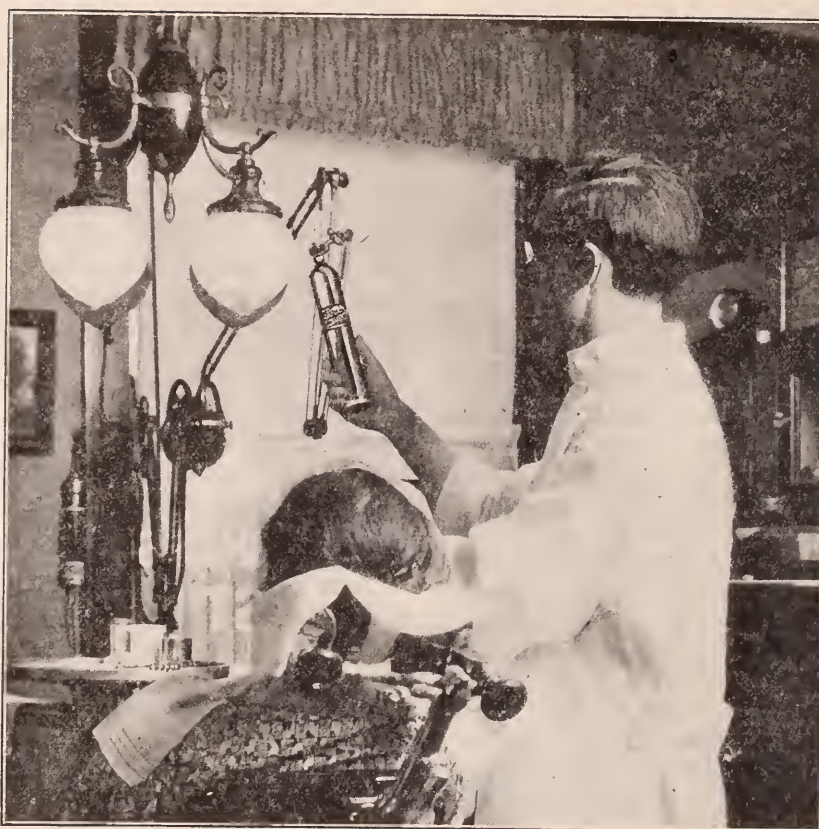


Fig. 1. Nemmers' Essential Hand Piece Sterilizer.

This photograph shows the operator about to treat a dental patient with the hand-piece sterilizer with the author's new invention.

This view shows the operator about to remove the hand-piece or drill-holder from "The Essential Hand Piece Sterilizer." By the perpetual sterilization of the hand piece or drill holder all danger is averted of disease from patient to patient. This sterilization is made possible by Dr. Nemmers' invention.

6205 Broadway.

ON MEDICAL ETHICS*

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Ethics, derived from the Greek word, "ethos"—morals, is the philosophy of morals.

And since all philosophy is the love of and strife for wisdom and truth, medical ethics must be inspired and governed by the same principles. These are plainly laid down in a little booklet issued by the American Medical Association after its adoption by the House of Delegates at Atlantic City, N. J., June 4, 1912.

Allow me to quote Section one from the first chapter:

"A profession has for its prime object the service it can render to humanity; reward or financial gain should be a subordinate consideration. The practice of medicine is a profession. In choosing this profession an individual assumes an obligation to conduct himself in accord with its ideals."

These are indeed grand and lofty ideals, almost equivalent to the philosophical maxim of Fichte and quoted by Nietzsche: "There is only one real virtue, and that is never to think of one's self and always of others." "And there is only one vice and that is always to think of one's self and never of others."

This sentiment stands in bold contrast with the cold law of self-preservation which governs all physical nature, the sole object of which is the survival of the fittest.

But man, the crown of creation, stands between these two laws, the idealistic and the materialistic, the spiritual and the physical, since he is endowed with certain prerogatives which no other mundane creature possesses, namely,

*Read before the Physicians Fellowship Club of Peoria, February, 1925.

reason, intellect and free will emanating from that mysterious source, the soul.

It is not my purpose to discuss the origin and descent of man, or to incite a controversy as to the assumption of the belief in a creation by God or a spontaneous origin and subsequent development by natural laws of evolution. I shall simply state what all philosophers and deep thinkers from time immemorial to our present age have believed and professed, namely, that man is a dual being, composed of a body and a soul.

But of all philosophers from the dawn of civilization down the centuries to our own enlightened age, none has expressed this fact more clearly and more forcefully than the Roman historian, Cajus Crispus Sallustius (87 B. C.-35 B. C.) in his preface to his history of the Jugurthian Wars, from which let me quote a few sentences: "Falsely man accuses his nature of being weak, of short duration and rules more by chance than by his own will power. For after deep study I have found that there is nothing greater and more powerful than human nature. But the leader and ruler (*dux et imperator*) is the spirit or soul (*animus or anima*). And if this keeps the path of virtue and marches on to perfection, it is powerful enough and needs not to depend upon chance or circumstance. For honor, rectitude, bravery and all other virtues can not be given to or taken away from man."

This, then, is the fundamental principle of all constructive philosophy, and consequently of ethics, which, as I said before, is the philosophy of morals.

Morality is the great connective tissue of all human bodies, individually and collectively. This fact gives rise to the old maxim, "*Mens sana in corpore sano*," which applies not only to individuals, but all bodies of men, families, communities, states, nations and all the peoples of the earth. And it applies with especial force to our profession, composed of men who are privileged to bear the exalted title of Doctor, which means teacher, indicating that we should teach, advise, warn and guide all our fellowmen in general and our patients in particular, thus contributing our share to the welfare of mankind.

From this we may easily see that the general definition of ethics should appeal to us with particular emphasis. But no lesson will have the desired effect unless it is accomplished and

sustained by our own precept and example. For our own guidance I know of no better principles than those so admirably expressed by the father of our country, George Washington, in his last Inaugural Address, April 30, 1789: "No people can be bound to acknowledge and adore the Invisible Hand which conducts the affairs of men more than those of the United States." And again: "The foundation of our national policy will be laid in the pure and immutable principles of private morality"—and again: "I dwell on this prospect with every satisfaction which an ardent love for my country can inspire. Since there is no truth more thoroughly established than there exists in the economy and force of nature as indissoluble union between virtue and happiness, between duty and advantage, between the genuine maxims of an honest and magnanimous policy and the solid rewards of public prosperity and felicity since we ought to be no less persuaded that the propitious smiles of Heaven can never be expected on a nation that disregards the eternal rules of order and right which Heaven itself had ordained."

We may justly say that there is no class of men or profession that is more bound to accept and obey these laws, which involve all the rules of order and right of the human race, its conception, its existence, its propagation and its mortal destiny than the Medical Profession. We may consider human life in all its phases from its embryonic stage to its final dissolution and our duty is ever clearly defined, to save, to assist, to prolong, and never to destroy, to cut short or to interfere with or hinder its course.

I hesitate to refer to those physicians who degrade their profession by violating the fifth commandment, "Thou shalt not kill," and willfully and habitually commit crimes against the Laws of God.

There are those who would abhor any thought of committing a first degree murder, but would under a slight pretext suggested by some of our modern movements based upon humanitarian theories, feel safe and even justified to interfere with nature, control propagation and take the law of self-preservation of helpless beings into their own hands.

The ways and means of these operations are various and manifold; some apparently innocent and harmless, others dangerous; most of them detestable and filthy. They sail under the false

flag of "Birth Control" or "Therapeutic Abortion."

To make my personal standpoint on these questions clear, allow me to make my own confession of faith, which is based distinctly and unalterably upon the teaching of Thomas Aquinas, who carried the threefold title: Doctor Angelicus, Doctor Ecclesiae, Doctor Universalis, who permits no interference with the natural laws of propagation from the very conception to the full term of the child. He also condemns the prevention of pregnancy under any circumstance whatever.

But I am aware that there are many who are not bound by this rigorous moral dictum. With these I have no quarrel, as long as they follow the dictates of their own conscience and keep within the bounds of the state laws, which are patterned after the Code Napoleon, and have been adopted by this and many other countries.

And alluding to some of my confreres who by chance perform some illegal operation. I would temper justice with mercy and extend my sympathy in some particular cases. I mean these cases where a physician has become the victim of his compassion for an unfortunate human being and then betrayed by his supposed friends, whom he had served in their woe, has to bear the whole burden of disgrace and pay the penalty for his wrong, committed under the delusion, "The end sanctifies the means."

I repeat that I am absolutely free from all these practices, but believe, nevertheless, that this question, compared to which all other rules of medical ethics seem insignificant, calls for our prime consideration.

We will, therefore, glance but briefly over the various chapters of the little booklet alluded to and make a few cursory remarks as we may understand the various questions at issue.

But if we imbibe the true spirit elicited in Chapter 1, Section 1, already quoted, our duties to each other, to our patients and to the general public ought to be easily discernible.

There is no doubt in my mind that we all agree that SERVICE, DUTY, SACRIFICE, HARDSHIP, DEVOTION and DETERMINATION to fulfill the obligations we assumed when the exalted title of Doctor was conferred upon us are the principles to which our lives have been dedicated. But, however we may agree on these leading points, we often disagree in the interpretation and practical execution of these basic principles.

These disagreements sometimes become so glaring that we are inclined to accept the distasteful maxim, "Quot capita, tot sensus"—"So many heads, so many opinions." What is the hereditary cause and what are the acquired reasons for these differences of opinion?

The first, and probably the main cause, is the fact that we are but human, and as such we are liable to err, like all other human beings. But a still more potent factor is the great difference in each of us. We all came from different parents and they themselves were unlike and different. In fact, there are no two human beings or other mundane creatures exactly alike.

Take, for example, only one organ, the nose. And I hesitate not to assert that there are not two noses in this room, in this city, in this state, in the whole United States, exactly alike. And as each and every one follows his own nose, figuratively speaking, we can readily understand why we take so many different courses and arrive at so many and varied conclusions.

Among the acquired and contributory causes we may mention environment, education, and all other spiritual and physical influences and impressions. This condition becomes more apparent in a democratic form of government like our own where there is no general recognized authority and no universal standard. The learned Lyman Abbott, in his book, "The Rights of Man," incorporates these effects in the chapter entitled,

"The Perils of Democracy." And further on he makes the following important statement: "Along with this absence of restraint have gone influences to develop individualism in extreme forms. It is the fundamental postulate of democracy that the world and life are made for the whole human race. Because the world is made for humanity, it is concluded that all men must have an equal share in the wealth of the community. Because all men ought to have an opportunity for education, the conclusion is easily reached that every man should take the education that he personally likes and he should not be required to do anything that is contrary to his own inclinations. So the wish of the individual, whether in government, in industry or in education, is enthroned, and man bows down before a Great White Throne, himself sitting upon it."

"The result of this apotheosis of humanity and this discrediting of authority is seen in some

forms of activity that are praiseworthy and some that are not."

This "Great White Throne" has become quite conspicuous in the medical profession. And it can hardly be said that its action and its rule have been praiseworthy in every particular. For upon this throne are sitting not the rank and file of the medical profession, but only a few self-approved, self-exalted and self-conscious men who have taken it upon themselves to assume the unconditional jurisdiction over all questions pertaining to medicine. They claim the right and the power to fix the standard for all human institutions, educational, charitable and industrial. In short, they are to tell us how to begin the study of medicine, what course to take, how and when to finish, and then how to take up the practice and just how to conduct ourselves through life to the bitter end."

For this purpose they have decided to grade all colleges and hospitals and their respective graduates and medical attendants according to their standard, holding a strict censorship over all. I do no question the worthy intention of a certain body of men to raise medicine to a high standard of knowledge and to put our profession on a level or even above that of other learned professions. But considering the results so far obtained I am reminded of the old German saying, "Zu scharf schneidet nicht: zu spitzig sticht nicht," and the American adage, "The government which is governed the least is governed the best." That is, carrying a good thing to extremes is very apt to spoil its beneficial results and often works harm instead of good. This is clearly demonstrated by all of our prohibitory or near-prohibitory laws. Not to mention the 18th Amendment, concerning which I hold my own private opinion, I will only allude to our Immigration Laws, and state positively that if these laws had been in force a hundred years ago our country would still be a wilderness and the El Dorado of greedy adventurers. There is no doubt that thousands and thousands of men and women who helped to build up this glorious country of ours would not have been permitted to land on our shores if the present law had been in force at that time. For they had little or no money and no book learning. But they had clear minds, brave hearts and abundant physical strength and character and determination to become useful citizens.

We can say the same of the old members of our profession. Many of these who have in the past received their license to practice medicine could not now fulfil the requirements and pass the examination now demanded and prescribed by the present authorities, but nevertheless they are a credit to themselves, an honor to their modest school, and a blessing to suffering humans in the community in which they lived and labored. They know nothing of red tape or tape-worm-like chemical and technical terms of the present phraseology, but they know quite well a dozen or more of the most substantial and reliable remedies, their ingredients, their physiological action, antidotes and synergists, and their indications. They know how to deliver a woman, how to wash and take care of the baby, and could make a differential diagnosis between measles and chicken pox, between eczema and smallpox and similar diseases. They can detect a fracture and set it, recognize a dislocation and know how to reduce it. And they can do all this without X-rays, or the help of assistants and trained nurses either in plain daylight or under the rays of a kerosene lamp or, per chance, a stable lantern. And last but not least, they are as a rule quite able to make a correct prognosis. These qualifications primitive as they may appear to us, supported by a strong personality, honorable conduct and a high perception of dignity, gave the good old family physician an eminence which enabled every man, woman and child to recognize a Doctor on sight and never to mistake him for a waiter, a barber, a beauty parlor proprietor, a knight of the grip or some such actor on the stage of our modern life.

Let me now allude to the present status quo. We all know that our so-called Class A No. 1 colleges require of its pupils so many years of study and so much money that only the most zealous and financially able can pursue and complete their medical training. The eventual result will be a great scarcity of doctors, particularly of family physicians. For it is obvious that men who have spent the best part of their life and between \$15,000 and \$25,000 will have no desire to take up a common practice yielding an income far below that of a plumber or bricklayer. So history will repeat itself and our profession will sink down to a mean trade, as it was once proclaimed by the Roman Senate.

We can clearly observe the handwriting on the

wall now if we direct our attention to a court trial where our highly inflated specialists appear as the laughing stock of the audience and the target for ridicule of witty lawyers.

My time is up, but before I close I wish to return for a moment to the "Great White Throne" to consider only two decrees which the powers-that-be promulgate with particular emphasis and imperative force.

The first is directed against the dividing or splitting of fees and the second is against public advertising.

The first question can be answered in a few words, in which I shall give you my experience, which you may accept or reject, as you like. I have practiced medicine for many years in almost every capacity. I have always had much more difficulty in collecting my fees than I have had in disposing of them. In cases where one or more physicians or surgeons were concerned we acted upon our own judgment and sense of fairness. At times the consultor did the collecting, at others the consultant, according to agreement. Sometimes it was even necessary to solicit the aid of an outside collector, who was or was not successful, as the case might be. I do not, however, remember one instance where I appealed to Washington, New York, Chicago or Rochester (which, by the way, was not on the map in those days) for a decision. And I do not feel that I could do so now in any case of my own.

And now a few remarks about advertising. Those who know me personally or through my modest literary efforts will believe me when I say that I have nothing but contempt for any kind of pretension or commercial hypocrisy in any shape or form. And I must necessarily condemn all quacks and pretenders and their advertising, in which they claim to cure cancer and other so far incurable diseases, to make hair grow on a billiard ball or restore lost manhood to a corpse. Consequently, they are of no consideration to me whatever.

It is only our regular profession that concerns me. There are but few men who are inclined to hide their light under a bushel. Hence we all like a little publicity, a little honor, a little fame and, of course, a little tangible reward.

But just how to achieve this is the paramount question and the evervexing controversy.

A little incident, if you will allow me to relate it, illustrates this:

Many years ago I attended a meeting of the Wisconsin State Medical Society in Milwaukee. I was in company with a French gentleman and an old army surgeon. We arrived at noon, took rooms in a local hotel, and after dinner went to the City Hall, where the meeting was being held, to try to get acquainted with other visitors and to study the program. The following morning my colleague, Doctor F., woke me with the startling news that our names were in the paper, holding one before me as he spoke. I looked and saw Dr. Nicholas Senn's name in glaring type in the headline of the front page, with the wording, "All Medics meet from Doctor Senn down to Doctor Sheepkin." I also noticed Doctor John B. Murphy's name in large type and a few others in smaller type. But I failed to find our names, when Doctor F. pointed to the "Doctor Sheepskin," with the remark, "There is where we are."

During the meeting, Dr. Nicholas Senn demonstrated his Hydrogen Gas Test on two live dogs, which he shot through the abdomen, and then attempted to find the holes by the escaping gas. Dr. John B. Murphy, who was then an ascending star, opened a discussion opposing the theory and practice of Dr. Senn very forcefully and, in my opinion, very successfully.

To this I shall only add that the whole performance appeared to me extremely spectacular and highly sensational, furnishing abundant stuff for the press. If this is not high-brow advertising I should like to know what it is. But, of course, we know the old maxim, "*Licet Jovi non licet bovi.*" So when a man of lesser fame and cleverness jumps into print the anathema from the "Great White Throne" is hurled upon him and he is excommunicated and condemned. I do not wish you to understand that I am a defender or protector of any advertiser or group of advertising doctors. I ask only for justice, for equal rights for all and special privileges to none.

The viewpoint and ultimate object of all advertisers is the idea, "Come to me." The so-called ethical advertiser appeals to his colleagues, while the unethical advertiser addresses the public directly and openly.

The commercialization of the profession is another complaint, the existence of which I admit and deplore. But it is difficult for me to see the line of demarcation between the accuser

and the accused, between the aggressor and the aggressed, as it were.

For I know of no modernly equipped doctor's office which the spirit of commercialism has not installed, and I know of no up-to-date successful physician and surgeon, and particularly no specialist, who is entirely devoid of business ability and does not resort to some red tape to produce a better effect. So we may as well lay these questions on the table for the time being, at least, and remember Goethe's stanza:

"Do thou the right thing in thy own affair,
and the rest will of itself take care."

But the paramount question remains, "What is the right thing to do?" This, I hope, has been answered in the foregoing remarks. But I shall repeat and define it still more clearly. Let us strive to observe the principles of ethics, i. e., the philosophy of morals, as our own judgment dictates and endeavor to be gentlemen under all conditions and circumstances and treat our confreres as we should wish them to treat us.

More than fifty years ago Doctor Peters of Paris, France, in a controversy with irregular pretenders, made the positive public announcement: "Doctors must be educated." To this let me add, "Doctors must be gentlemen who observe in their daily conduct the policy of private morality and in their mutual relations with their confreres the fundamental principles of our Christian faith: "In all essentials, unity; in non-essentials, liberty; but charity in all and for all." If we observe this rule, the standard of our profession will be raised to a high and solid level where it will have little need of new amendments, by-laws and regulations of any kind whatsoever.

INHERITED SYPHILIS AND DEAFNESS

A recent editorial in the *Washington Times* says that "There are many cases of deafness from birth or early infancy, some due to microbes that attack the new born child. Twenty-five per cent of such attacks come from heredity, venereal blood disease—one of the worst enemies of the human race and one of the most dreadful punishments of vice."

Deafness of such origin may be total or partial, and it is usually an affliction of the internal ear. The defect is often not recognized until the child fails to talk, the attack of syphilis being unexpected and somewhat elusive. Syphilitic deafness, says the United States Public Health Service, need not be profound, but its gradual or sudden effect on the hearing capacity of the afflicted child often spells economic and social disaster, and it usually reduces life to an ob-

scure and baffling existence. Fortunately, considerable progress has been made in the treatment of deafness of venereal origin, and the future promises still greater progress in its elimination. The early detection of diseased blood in the expectant mother is essential, so that the possible ear damage of the child may be prevented by adequate treatment of the mother before the birth of the child. The preparation and widespread dissemination of information relating to the prevalence, the detection and the prevention of venereal diseases is a most essential and productive health measure.

NOT THE USUAL RULE

"You can't sit quiet and produce profits," says an efficiency expert. But the hens do pretty well at it.

Society Proceedings

PIKE COUNTY

The Pike County Medical Society met in Griggsville, July 23, 1925, with twenty-three physicians present.

This session was in the nature of memorializing the twenty-fifth year of the society's organization, since it was organized in the year 1900. Many were away on their vacations or the attendance would have been nearly doubled. After a fine chicken dinner provided by the hosts, the Griggsville physicians, the society met in the public library. Minutes of last meeting read and approved. Dr. Harry Wood of Batchtown, Calhoun county, was passed by the censors and received a member in the society.

Mr. Quaintance of Springfield, on behalf of the C. I. P. S., gave an interesting address on the subject of the "Prone Pressure Method of Resuscitation" in electric shock and gas asphyxiation. This received much discussion and was approved by the society as a valuable addition to other methods and prospectively will supplant other methods entirely. The actual demonstration of the method was given, Mr. Pierson of the local electric company acting as patient.

Dr. John Koch of Quincy then read a valuable and comprehensive paper on "Spinal Puncture; Its Use in Diagnosis and Prognosis." This was illustrated by films and the anatomy, physiology and pathology thoroughly passed in review.

Dr. Carl Black of Jacksonville, past president of the State Society, read a very fine appreciation of two very famous surgeons who grew up in Pittsfield and practiced there for several years and afterward moved to St. Louis. These were Dr. John T. Hodgen, past president of the A. M. A. and professor of anatomy and clinical surgery in the Missouri Medical college. The other, his nephew, Dr. Henry Mudd, also of St. Louis, who became professor of surgery and distinguished throughout the middle west. This paper was in the nature of an historical document and received many compliments and becomes a part of the secretary's records.

Dr. M. Pfeifferberger of Alton, president-elect of the

State Society, then read a fine paper on "Eugenics," which was discussed at length and approved.

Dr. Smith of Godfrey and Dr. Robinson, president of the Madison County Medical Society, made short addresses, which added much to the success of the occasion. Barry was selected as the next place of meeting and the society adjourned at 5 p. m., after a day well spent.

W. E. SHASTID, Secretary.

Marriages

GEORGE DAVID HAUBERG, Moline, Ill., to Miss Emma Rydell of DeKalb, June 24.

WILLIAM BRADY SHARKEY to Miss Oma Hartsock, both of Clinton, Ill., June 3.

MORGAN GILMORE CARPENTER, Elgin, Ill., to Miss Martha Elizabeth Kelley of Margeno, June 22.

CHARLES EDWARD HILDRETH, Mount Pulaski, Ill., to Miss Margaret Amalia Stumpf of Lincoln, July 4.

KAMIL SCHULHOF, Chicago, to Miss J. Serrita Jane of Chicago, formerly of San Francisco, July 3.

JOHN A. D. ENGESATHER, Brockett, N. D., to Miss Laura E. Norley of Grand Forks, N. D., June 18.

Personals

Dr. and Mrs. A. M. Earel of Hoopeston have recently returned from a cruise around the world and report a wonderful experience.

Dr. Herman J. Hensley has been appointed to the board of health of Yates City.

Stephen A. Forbes, M. D., has been reappointed director of the Outlook Tuberculosis Sanitarium, Urbana.

Dr. Charles E. Shultz, Shirley, has been appointed city health director for Bloomington to succeed Dr. Harold B. Wood, resigned.

Dr. Henry B. Knowles of the state charitable service has been transferred from Bartonville to Dixon, to be assistant managing officer of the Dixon State Hospital.

Dr. Warner H. Newcomb, for several years health officer of Suffolk, Va., has been appointed health officer for Morgan County and also superintendent of Oak Lawn Sanatorium. Dr. Newcomb is a native of Illinois.

Marion Hines-Loeb, Ph.D., assistant professor of anatomy, University of Chicago, has been

appointed to the position of associate in anatomy at Johns Hopkins University Medical Department, Baltimore.

Dr. M. A. Karol, Decatur, has been appointed surgeon in charge of the Wabash Railroad Hospital in that city, to succeed Dr. Frank E. Smith, who has been appointed chief surgeon of the Wabash Railroad to succeed the late Dr. M. P. Parrish.

Dr. Alice Hamilton, assistant professor of industrial medicine, Harvard University Medical School, Boston, and a member of the health commission of the League of Nations, spoke recently at a luncheon at the City Club on "International Aspects of Public Health, Including the Control of Ethyl Gasoline."

At the one hundred and thirty-seventh convocation of the University of Chicago, June 16, Prof. Albert A. Michelson, head of the department of physics, was appointed to the first of the Distinguished Service Professorships recently established at the university with a special fund of \$200,000, the gift of Martin A. Ryerson, formerly president of the board of trustees and donor of the Ryerson Physical Laboratory.

Dr. George M. Curtis has been appointed associate professor of surgery at the University of Chicago and associate professor of experimental surgery under the Douglas Smith Foundation for Research of the University of Chicago. Dr. Curtis returns to the University of Bern, where he has an appointment as assistant in the surgical clinic under Dr. F. DeQuervain at the Inselspital, pending the opening of the new University of Chicago Hospital.

Dr. Perry C. Thompson of Jacksonville, Ill., who has practiced medicine continuously in Morgan County for 42 years, is retiring from active practice and will in the future make his home in Evanston, Ill. He graduated from Rush Medical College in 1883 and since 1887 has practiced continuously in Jacksonville, Ill., with the exception of intervals of foreign travel in Europe and South America. During these years of practice, he has served as physician to The School for the Deaf, physician for Insane at Oak Lawn retreat, and President of the Board of Pensions in this district. Dr. Thompson was one of the founders of the Jacksonville Medical Club and its first president, and is also the oldest active member of the Morgan County Medical Society.

News Notes

—The Michael Reese Hospital is making plans for a \$1,000,000 addition, including a laboratory building.

—Hamilton Mabie, a chiropractor of Belleville, was found guilty by a jury in the county court, June 24, on a charge of practicing without a license. Mabie's defense was that he started practicing before the 1923 law requiring chiropractors to be licensed was passed.

—The Metropolitan Life Insurance Company is publishing a warning in a number of high class magazines against fake "cures" especially for tuberculosis and cancer. The article calls attention to the credulity of the public for all "printed" statements as compared with "spoken" words. The final advice is: "Do not be deceived by the magic of print. Avoid advertised 'cures.' If you are sick see your Doctor."

—A new law in Illinois provides that cities of from 5,000 to 100,000 people may levy a three-tenths mill tax to pay the salaries of community nurses who are appointive by the mayor on recommendation of the local board of health. At present many of the public health nurses of the state depend on private sources involving, says the state department of health, fund raising campaigns and public subscriptions for financial support.

—A committee of fifty physicians and philanthropists has undertaken to raise the necessary funds to establish a Behavior Research Institute in Chicago where problems of the child may be studied and work done to prevent juvenile crime and delinquency. It will be allied to the present Institute for Juvenile Research. Booklets describing the proposed work have been sent to 1,000 citizens, whose help has been solicited to raise an annual fund of \$55,000 for the next five years.

—About 200 physicians gave a banquet at the Drake Hotel, June 23, to Dr. Dean Lewis, who will leave in the near future for Baltimore, where he has accepted the chair of surgery at Johns Hopkins University Medical School. Dr. James B. Herrick was toastmaster; among the speakers were Dr. Gotthelf Carl Huber, University of Michigan Medical School, Ann Arbor, Amos Alonzo Stagg, University of Chicago, and Drs. Allen B. Kanavel, Vernon C. David and George F. Dick.

—A law becomes effective, September 1, which

requires all milk pasteurization plants, except those concerned exclusively with markets in cities of 500,000 or more people, to secure a certificate of approval from the state department of health. The certificates can be issued only after an inspection of the plant by a sanitarian, and milk dealers who do not employ the standard pasteurizing process will be prohibited from advertising their products as pasteurized. Another new law relating to milk provides, among other things relating to tuberculin testing, that municipalities may prohibit the sale of milk from any herds that have not been tuberculin tested.

—The state department of health reports that nine persons developed typhoid among the twenty-five who attended a club meeting near Chana in May. Those who became sick had eaten food served at the party, and evidence obtained by an investigator of the state health department indicated that one of the hostesses was ill at the time she prepared an uncooked salad. The typhoid incidence in Illinois for June was nearly twice that for June of last year, and higher than for the corresponding month in any year since 1921. For the first six months of this year, 505 cases of typhoid were reported, against 359 for the corresponding period of 1924.

—Following the receipt of many requests for an opinion of the Public Health Institute of Chicago, the official *Bulletin of the Chicago Medical Society* (June 20) states that it is an unethical institute in every sense of the word; that the physicians who work for the institute are not members of the Chicago Medical Society, "some by choice and some by expulsion," nor has the institute any well known genito-urinary specialist on its staff; that the institute is a private corporation practicing medicine and charging fees; that it uses full page advertisements as a means of procuring business, and that physicians who connect themselves with the institute will be brought before the ethical relations committee of the Chicago Medical Society.

—In a decision, June 20, the Illinois Supreme Court upheld the constitutionality of the Medical Practice Act of 1923 and affirmed the \$300 fine of Chiropractor Max W. Walder, Danville, for practicing without a license. The contention of the defense was, it is reported, that chiropractic is a useful and harmless practice which cannot be regulated by the state. The court said that a

method of treating human ailments cannot be both useful and harmless, for if it is sufficiently efficacious to be useful, it is at the same time capable of producing harmful results when practiced without care or skill. This is said to be the first case of a chiropractor disbarred from practice without a license which has been brought to the attention of the supreme court of Illinois.

—An ordinance has been completed in the office of the corporation counsel of Chicago for submission to the city council, which would regulate the possession, selling, giving away or otherwise distributing pathogenic bacteria. The following resolution concerning the ordinance has been adopted, it is reported, by a special advisory committee of the Chicago Department of Health, comprising Drs. Ludvig Hektoen, Frank J. Norton, Alexander A. Day, James J. Simonds, David J. Davis, Lloyd L. Arnold, Josiah J. Moore, Charles P. Caldwell, Jacob C. Geiger and Frederick O. Tonney:

It is the sense of this committee that the control of the distribution of pathogenic cultures among laboratories, universities and research institutions by ordinance is impractical, and that the attempt so to control them will be a serious obstacle to teaching and will retard scientific progress. Such ordinances are futile and tend to break down respect for law.

—Applications for entering babies in the tenth annual State Fair Better Babies Conference, to be held in Springfield, September 19-26, will be accepted up to September 12, unless the capacity is reached before that date. More than 1,300 babies, representing fifty counties in the state, were examined last year, and a staff of about 100 physicians, psychiatrists, nurses and others make up the organization that gives the examinations. Fifty-three awards, in the form of savings bank accounts which vary from \$2 to \$100 each, and other prizes, are offered to children found to be most nearly perfect. Children between 6 months and 5 years of age are eligible to compete, as well as families of six children under 16 years of age, and children up to 6 years of age examined last year may compete for improvement awards.

Deaths

EMIL C. BECKER, Deerfield, Ill.; Rush Medical College, Chicago, 1897; a Fellow A. M. A.; aged 63; died, July 6.

BURT GEORGE BISSELL, Chicago; University of Illinois College of Medicine, Chicago, 1907; formerly on the staff of the Cook County Hospital; aged 55; died, June 12, of pericarditis.

AUGUSTINE BEN CHILDS, Keithsburg, Ill.; Rush Medical College, Chicago, 1908; a Fellow A. M. A.; aged 44; died recently.

THOMAS JOSEPH VALLIERE DAGNAULT, Chicago; Chicago College of Medicine and Surgery, 1911; a Fellow A. M. A.; member of the American Urological Association, and the Chicago Urological Association; served in the M. C., U. S. Army, during the World War; aged 38; died suddenly, July 8, of heart disease.

DAVID ALEXANDER DRENNAN, Springfield, Ill.; Rush Medical College, Chicago, 1875; aged 74; died, June 26.

GLENN STEWART EVANS, Peoria, Ill.; Chicago College of Medicine and Surgery, 1913; member of the Illinois State Medical Society; served in the M. C., U. S. Army, in France, during the World War; aged 34; died suddenly, June 23.

EDWIN J. GAUSE, Unity, Ill.; Central College of Physicians and Surgeons, Indianapolis, 1882; aged 67; died, July 6, at Cairo, of a self-inflicted bullet wound.

VERNON DAYTON HOLBROOK, Peoria, Ill.; Baltimore Medical College, 1902; aged 49; died, April 17, of streptococcus sore throat and bronchopneumonia.

B. FRANK LANDIS, Tiskilwa, Ill.; Jefferson Medical College of Philadelphia, 1877; member of the Illinois State Medical Society; aged 74; died in June, of heart disease.

AUGUST MUEHLENPFORDT, Ashkum, Ill. (licensed, Illinois, 1877); aged 86; died suddenly, June 12.

WILLIAM A. PETERSON, Chicago; College of Physicians and Surgeons, Chicago, 1897; a Fellow A. M. A.; member of the Chicago Ophthalmological Society; for twenty years medical director of the Mutual Trust Life Insurance Company; aged 58; died, June 28, at the Presbyterian Hospital, of pyelonephritis, following an operation.

WILLIAM CHRISTOPHER RIFE, Villa Ridge, Ill.; Vanderbilt University School of Medicine, Nashville, 1894; member of the Illinois State Medical Society; aged 54; died, June 11, at St. Mary's Infirmary, Cairo, following a long illness.

NELSON RINEDOLLAR, Mount Carroll, Ill.; Chicago Medical College, 1869; member of the Illinois State Medical Society; Civil War veteran; formerly health officer of Mount Carroll; aged 86; died, June 30, of heart disease.

IDA M. SANBORN, Chicago; Bennett College of Eclectic Medicine and Surgery, 1898; aged 57; died, July 3, of heart disease.

GUSTAVUS FRANK SCHREIBER, Chicago Heights, Ill.; Rush Medical College, Chicago, 1875; member of the Illinois State Medical Society; aged 76; died, July 2, at the Masonic Home, Sullivan.

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Send original articles and all communications relating to advertisements to Dr. Charles J. Whalen, Editor, 6221 Kenmore Avenue, Chicago.

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Editorial

MEDICAL EDUCATION GRAVE QUESTION.

One of the moot questions of the moment is the future of medical education. In this each physician of the land should lift his voice towards securing standardization of the requirements necessary to permit an individual to prescribe any sort of medication for the human frame. Examinations required by the state should be of such duress as to exclude all quacks. Legislative restrictions must be so amended and perfected as to weed out the ignorant and unscrupulous charlatans that have not failed to make for themselves soft berths through the laws that they themselves lobbied through, and through the loopholes in existing statutes that they have managed to gnaw. Sustaining of the Medical Practice Act has been a radical victory both for the rights of science and the welfare of the general public. But at that many doctors simply let even this struggle "go by the board."

Medical colleges have raised the standard of medical education. Comes now the argument, has this standard gilded the lily? Has the standard been placed too high, the requisite years of anti-medical training become too prolonged for the highest service of mankind?

Has it become too expensive to learn to become a physician? Should not the profession itself determine whether there can not be some middle road between the necessary but not so frequently needed "specialist" and the almost practically obsolete "Old-fashioned Family Doctor"? The official family of the A. M. A. is concerning itself therewith as an organization. So are numerous state and county societies. The problem will commence to approach solution when individual practitioners concern themselves therewith, as well as with other civic problems.

Scarcity of the old-fashioned family practitioner is letting down the bars for the lay-practice of medicine both by corporations and individuals. Apathy of the physician the coun-

try over, paves the way for the steadily increasing encroachment on the practice of medicine by unskilled lay-dictation. Only too often this dictation comes from untutored, soft-job seeking, professional ward politicians.

CINDERELLA OF THE PROFESSIONS

Medicine might be called in all truth, the "Cinderella" of the three learned professions—Divinity, Medicine and Law—in so far as opinion rests with the popular estimate of the province and power of law and divinity and the failure to appreciate the scope and strength of medicine. Doctors are taken en masse. Let a doctor err, once or many times, and forthwith behold the condemnation of the entire profession. Yet while the failings or foibles of a divine may be ridiculed or condemned, critics never dream of charging his creed with the faults of the man. Let a lawyer lie or a judge be bribed, or a witness perjured, yet the majesty of the law is not impugned.

Raising the standard of entrance requirements by leading educational institutions has made possible establishment of schools with less exacting standards. This may bode evil for medicine. There is a chance that instead of bringing about a rise in medical education that there will be an actual decrease in the average attainments of the medical output of this country. Discerning minds realize the crying need of systematic and thorough examinations of all applicants for license to practice medicine in these times when there is such a disposition on the part of state legislators to grant full privileges to practice medicine to members of every cult and "ism." Laxity in lawmaking evolves, in large communities such as in great cities like Chicago, lack of protection for scientific medicine, the strewing of obstacles in the path of its progress and abuses beyond counting—charlatans, quacks and empirics without end—and so few champions for scientific medicine in the country's legislative bodies.

HAZARDS OF MODERN MEDICAL PRACTICE.

NIGHT HAWK GUNMEN SUPERSEDES INDIAN WARRIOR AND ROAD AGENT

Indians, road agents and highway men menaced physicians in frontier days. These dangers were picayunish compared to the perils confront-

ing the modern doctor, especially in large cities like Chicago, where the impunity of crime is becoming an international by-word.

In some of the larger cities, scores of doctors have been beaten up, either while making night calls or in isolated or suburban districts. They have been robbed, too, of their money, their jewels, and their automobiles. Compared with the modern metropolitan thug, the pioneer gangster was a shambling, maundering tyro. A perfect-product of Machiavellianism is the up-to-date thug and highwayman. And two physicians were murdered within the last few months.

It is not thought that physicians are discriminated as a class, or that a gangster for a moment realizes that his object of attack is the man on a mission of mercy bent, but the results are as appalling where the welfare of the people is concerned. Many men of rare courage confess that they fear to make night calls. The dread that the summons is only a ruse is one fear. Again the perils on the road are only too well known.

It is the duty of a citizenry to police properly its cities and to safeguard human life. Failure to live up to this obligation makes a municipality hoist by its own petard. In the long run it is this same negligent citizenry that suffers most. Unless there is some action taken to correct this condition, physicians will be justified in their own protective measures. If crime continues unchecked and unpunished with murder excusable on the specious pleas of "glands" and "insanity," the country cannot survive. Never was there more pathetic demonstration of "A little learning is a dangerous thing" than the fashion in which justice is prostituted to meet the demand of sentimentalists and the hawking of learned phrases in the mouths of comparatively ignorant lay-men.

THE SOURCE AND USE OF VITAMINES

Dr. D. B. Jones, Bureau of Chemistry, Washington, D. C., in a recent report has considerable to say about the use and source of vitamins. He lays great stress on the fact that the lack of vitamins in the diet is a serious matter. He advises sufferers to avoid drug store preparations and to hunt for vitamins in vegetables. He says in part:

"In cases of suspected vitamin deficiency in

the diet," according to the report. "corrective measures should be taken through the use of suitable natural foodstuffs, and not through commercial vitamin preparations, many if not most of which are worthless."

Vitamins play a very different role in nutrition from the other food constituents. They are essential to growth, health and life, but they contribute neither energy nor tissue building material. Their function has been likened to that of the spark plug in a gas engine. They are often referred to as the accessory food factors.

LACK OF VITAMINS SERIOUS

"People and animals are unable to provide vitamins within their bodies," the report points out. "Lack of sufficient vitamins in the diet is soon followed by serious consequences. Young animals will fail to grow normally, and adults will rapidly decline in weight and develop certain characteristic affections known as deficiency diseases.

"It is now known that there are at least five vitamins, designated as A, B, C, D and E, and it is probable that others will be discovered. The absence from the diet of any one of the five will produce certain characteristic effects.

"Vitamin A, for instance, is essential to growth and health. Young animals on a diet devoid of it soon stop growing and lose weight. Their vitality becomes lower and they are less able to resist disease and infection, particularly of the respiratory tract.

AFFLICTION OF EYES RESULTS

In many animals, as rats, dogs, rabbits and poultry and also in man, a characteristic affliction of the eyes results. The administration of vitamin A prevents or promptly cures this affliction. Growing animals require more of it than do adults.

It is abundant in butter, cream, cheese, whole milk, egg yolk, the liver, heart and kidneys of animals, in spinach, lettuce, cabbage tomatoes, carrots, sweet potatoes, parsnips and green peas, and is present in varying quantities in many other foods. Cod liver oil is rich in this vitamin and the liver oils of some other varieties of fish contain it.

"Vitamin B is also necessary for the maintenance of life and health at all ages. Lack of

it promptly results in loss of appetite and arrest of growth, followed by various functional disorders and, finally, death. This is the most widely distributed of all the vitamins. It is abundant in green plant tissues. Cereals and seeds contain it, the germ of the seed being an exceptionally good source.

YEAST IS SOURCE OF "B"

"Yeast and the wheat germs are standard sources of this vitamin in experimental work. Roots and tubers as a class are good sources of it, and it is especially abundant in tomatoes. Most fruits and nuts are well supplied with it. Meat is reported to contain vitamin B. The heart appears to be the richest in this vitamin, and the liver and kidney have only slightly lower values. The flesh of the chicken, turkey, duck and guinea fowl, however, are deficient in it.

"Vitamin C is sometimes known as the 'anti-scurvy vitamin,' because a lack of it in the diet causes scurvy, a disease which has been prevalent among sailors, soldiers, explorers and others compelled to live for long periods on dried and preserved foods.

"The best sources of vitamin C are lemons, oranges, tomatoes, cabbage, lettuce, spinach, green beans and peas and turnips. Most green vegetables, fruits, roots and tubers contain vitamin C in varying quantities. Meat, excepting the internal organs, is a poor source. It has been reported that oysters contain it in abundance.

ORANGE JUICE PREVENTS SCURVY

"Milk contains it to some extent, but is an uncertain source. This vitamin is easily destroyed by the processes used in the preparation of many food products. Orange juice or tomato juice is sometimes given to babies reared on artificially prepared food as a precaution against scurvy.

"Vitamin D seems to control to a large extent the utilization of lime and phosphorus in the formation of bone by the animal organism. Its absence in the diet will cause rickets, a disease characterized by enlargement of the joints, softening of the bones and subsequent bending.

"Vitamin D is found in cod liver oil, in egg yolks and to some extent in milk and coconuts."

COOPERATION FOR SERVICE

This year's program of cooperation with the Child Welfare Department of the Illinois Federation of Women's Clubs for the examination of pre-school children in the state offers to the medical profession opportunities for practical service.

The Illinois State Federation of Women's Clubs is in many respects a powerful organization. Its membership comprises 70,000 women, 700 clubs. Like the component societies of the Illinois State Medical Society, some of these clubs are strong and exert great influence in their own communities; others are weak and futile. But as an educational medium it is to be doubted if any other organization can equal the Federation for the state-wide dissemination of new ideas and for the conservation of old ideals.

Under the leadership of Mrs. George Thomas Palmer, herself the wife of a physician, the Federation in Illinois has taken a long step in the direction of conservative, constructive work in every department. During Mrs. Palmer's presidency, its especially notable advances, to the average onlooker, appear to be those in the fields of American citizenship, law enforcement, education, and public health.

It is as a natural outgrowth of this tendency toward educational betterment that the Department of Child Welfare, with which the Illinois State Medical Society will cooperate closely during the coming year, proposes to make as the major project of the year the examination of pre-school children by the family doctor and dentist.

The Department is headed by Dr. Lena K. Sadler, a physician in active practice in Chicago, who plans to launch her campaign with the opening of the club year in October and by the close of the club year, May, 1936, to have reached the great majority of children of this neglected age in the state.

Most of such efforts for child welfare in the past have centered around the philanthropic phase, ignoring the fact that as many cases of malnutrition and removable defects are to be found in the homes of the well-to-do as in the homes of the indigent poor. In this instance, however, the Federation will stress the educational feature of the campaign beyond all others.

The Illinois State Dental Society and the State Department of Health will each contribute to this end.

The plan involves the emphasis of the personal responsibility of each member of the Federation for the children of her own household. It is asked merely that each of the 70,000 members see to it that one pre-school child, either of her own household or her neighbor's, or some child in her immediate community, is taken to the family doctor and dentist for this complete examination. Blanks for this purpose will be supplied by the State Department of Health. Each member of the federated clubs in the ninety-three counties of Illinois where there are active county medical societies will be furnished a list of all members in good standing in the county medical society of her county. It will be made very clear that this examination must be handled by a doctor of medicine and an explanation will be given in detail of what the single standard of medical education can guarantee as to the character and ability of the physician.

This means a certain responsibility on the part of the county medical societies. They are asked to give friendly support to this effort to get children, apparently well, into their own offices. They are asked to make the most of this opportunity; first, by filling out carefully the card which will be supplied them and calling the mother's attention to definite defects which may be eliminated either by better living habits, medical or surgical aid; second, they are asked to teach the principle of the periodical health examination for the adult, as well as the desirability of having the child brought back to them at least every six months in health, by the contact which is afforded them at this time; third, they are asked to emphasize the desirability of immunizing children against diphtheria and smallpox, in particular, also to enquire as to whether other members of the family have been vaccinated for smallpox and typhoid fever; fourth, secretaries of county societies are asked to supply, not later than October 1, to the Educational Department of the Illinois State Medical Society at 25 East Washington Street, Chicago, complete lists of their membership in good standing (members of the county societies who do not handle children's work may be indicated by symbol. They should not be omitted from the list. It is the desire that a premium be placed on

membership in the county society); fifth, county societies are asked to devote some time during the year to a consideration of child problems in their own counties. At this time considerable matter will be presented from the lay standpoint, difficulties may be threshed out which have arisen from the layman's inability to understand the physician's scientific point of view, and valuable guidance may be obtained by the carrying forward of educational work in the county.

The pre-school child campaign of the Federation will be attended by considerable statewide and local publicity. Practically all volunteer health organizations of standing have agreed to give the widest possible dissemination of facts about it. Many ministers have promised to devote one Sunday's sermon to the necessity of closer teamwork between the family and the physician. Commercial bodies have volunteered to use publicity matter in the wrapping of bundles; to send it out at stated intervals with every loaf of bread, pound of meat, and bottle of milk sold in a particular community. Industrial organizations in many localities have offered to put stuffers in pay envelopes, calling the attention of employees to this valuable movement. Generous cooperation has been promised from metropolitan newspaper and press syndicates.

There is no more ready approach to the interest and enthusiasm of the average layman than through the child. If the Illinois State Medical Society is to accomplish any real educational good during the next decade, it must begin its work with the children of this period. It is believed by the officers and council of the Illinois State Medical Society that with such a project as is suggested with the Illinois Federation of Women's Clubs, the Illinois State Dental Society, and the State Department of Health a definite step forward can be taken for the four major aims of the educational program; first, the teaching of the necessity and meaning of the single standard of medical education; second, the teaching of preventive medicine—the greatest single feature of this being the periodical health examination; third, the holding back of all legislation or popular tendencies toward placing the practice of medicine under the responsibility of political agents; fourth, teamwork with the community—the education of all organizations to the principle that the medical

profession must guide and direct all necessary public work which hinges upon medical treatment of the sick.

The campaign for the examination of the pre-school child may be made of great benefit to the medical profession in Illinois, providing each component society takes an active and interested leadership in the conduct of that work in each county. Without such leadership, any movement of this kind and in this direction will be a futility. So generous, however, has been the response from medical men in every part of the state for the meager experimental work of this nature attempted during the past year, that there is every indication to believe that 1925 and 1926 will see the greatest project of co-operation for service that has been attained by the professional and the lay people of Illinois.

A NEW BOOK ON CHRISTIAN SCIENCE THAT SHOULD BE IN THE HANDS OF EVERY DOCTOR.

IT IS A RARE WEAPON TO PUT IN THE HANDS
OF ALL ANTI-CHARLATANS. IN THIS VOL-
UME THE MEDICAL PROFESSION AND
THE SUFFERING PUBLIC HAS A
PARCEL OF T. N. T. TO
LAUNCH AT THE EVER
RECURRING CULTISTS.

THE FAITH — THE FALSITY — THE FAILURE OF
CHRISTIAN SCIENCE.

Lucid insight into the Christian Science sham, interpreted so simply that the less than average mind may comprehend the findings that three keen intellects have compiled from chaos is the epitome of "The Faith, The Falsity, and The Failure of Christian Science."

This book has for its authors, Woodbridge Riley, Ph.D., member of the American Psychological association, lecturer at the Sorbonne, 1920; Frederick W. Peabody, LL.B., member of the Massachusetts Bar, and writer of distinction, and Charles E. Humiston, M.D., Sc.D., professor of surgery in the College of Medicine, University of Illinois.

Both the theory and the practice of "The Religio-Medical Masquerade" is discussed feelingly by these three men, supplemented by a group of case-reports detailing with medicine's experience with Christian Science, at the ultimate "S. O. S." when death defied practitioners.

According to his own testimony, Dr. Humiston's sister-in-law died as a result of an ovarian cyst to which the practitioners had refused surgical treatment. This instance together with a symposium of the experiences of many other physicians in different localities, detailing the personal and public menace contained in Christian Science, both to the health of the individual, and to the health of the community, forms food for thought both to physician and layman. Exemplified here are actual reportings of what is going on all about us from child murder to wholesale disbursing of every contagious disease under the sun, from tuberculosis and syphilis to measles and smallpox. For those who will not heed unless first they see, this section, handled by Dr. Humiston, is the vital part of the book. It follows a preface under the section captioned "The Failures of Christian Science," of which the first chapter is entitled "Christian Science—A Medical Parasite."

Of this chapter the first three paragraphs more than merit quotation.

"Christian Science is the trade name under which a certain cult carries on its business of treating human ailments. The principal assets of this business is deceit. Its principal field of activity is among those who are financially prosperous.

"In any community, the adherents of this cult will be found to consist largely of pronounced suggestibles, augmented by a not inconsiderable number who seek a substitute for prevailing religion.

"Scientific medicine is in no wise opposed to religious freedom, but scientific medicine takes cognizance of the fact that all down the ages, quack-medicine and quack-religion have every now and again been linked together in unholy alliance for the ulterior purpose of plundering the sick. Christian Science claims to be a system of healing, which makes of it a medical question. Mrs. Eddy's Massachusetts Metaphysical College was chartered for medical purposes." . . . "The real meat of Christian Science healing can be compressed into three magic words, 'MIND IS ALL.' . . . The permeation, saturation, and overwhelming of the patient with this sovereign cure-all is Christian Science treatment of human ailments."

Woodbridge Riley begins his arraignment of "The Faith of Christian Science" with "this

chapter, originally published in 'The Cambridge History of American Literature' and suppressed under Christian Science Influences." Dr. Riley comments on the much bruited about alleged association with Mrs. Eddy of the late Bronson Alcott and his "transcendental wild-oat sowing." He says of the claims of Christian Scientists and their contentions of the voice of the Almighty through Mary Baker - Glover - Patterson - Eddy, "the thrice-married female Trismegistus" who "at the age of eight experienced a kind of juvenile annunciation." . . .

"These statements are accepted by the devout at their face value. The critic would turn the tables and consider this recent form of clinical Christianity to be a series of plagiarisms, in short, a system compounded from the esoteric religion, the occult medicine and the bizarre metaphysics of the day. So instead of a hall of fame containing Newton, Copernicus, Columbus and Mary Baker-Eddy one would be tempted to substitute an obsolete set of waxworks—the Shaker seeress, Mother Ann Lee, the Portland mesmerist Quimby and transcendentalism's "tedious archangel," Bronson Alcott. These three personages form the three clues suppressed in the orthodox account of the founder of Christian Science. Like her book knowledge, they have evidently "vanished like a dream." Riley makes clear, concise and comparative dissection of the sources and ramifications of Mrs. Eddy's work even through her ideas of mysticism and demonology and a supposed sex obsession that would have delighted Freud. Says Riley, "It is a truism in the psychology of religion that aberrant theological doctrines are often erotogenetic, that is, connected with abnormal sex doctrines. . . . Mrs. Eddy was obsessed on the subject of sex and that from her earliest appearance in print." He enters too into an outline of the "private teachings of Mrs. Eddy" wherein it is said she insisted women could conceive and bear children without the trouble of sexual intercourse, and it lay within her power "to dissolve such motherhood by a wave of her celestial rod." There is full explanation too of Mrs. Eddy's "Metaphysical obstetrics."

Mr. Peabody was employed as a lawyer by Mrs. Eddy's son, when he sued his mother. His section "The Falsity of Christian Science" is a supplement to his previous volume, "Religio-Medical Masquerade." He expounds the despot-

ism, the commercialism and the deceit of "the great leader," remarking "History leaves us in no doubt that Mrs. Eddy was not the first woman tyrant . . . but history will be searched in vain for another autocrat so arbitrary, so whimsical, so fantastic, so funny as Mary Baker-Eddy." He traces step by step the complete autocracy in which "Our Beloved Mother-in-God" bound her followers. It is to be lamented that physicians can not take a leaf out of her book of money-making. From Mr. Peabody's figures even John D. Rockefeller might have sat at her feet and learned the finesse of finance—at the exploitation of suffering humanity! And from her, too, Machiavelli, might have learned a few political tricks of the trade.

Not the least interesting citation of Mr. Peabody's is his claim that Mary's followers are falling off. He writes:

"The latest official figures of the strength of Christian Science in the United States are those of the Census of 1910. When these figures were gathered the rule prohibiting disclosure had not been made and the numbers were freely given. The total was 85,717, but as half the members of the Boston church were counted also as members of their local churches, the actual total was not far from 65,000. After forty years of intense activity, Mrs. Eddy's followers in the United States numbered 65,000 and no more. If Mrs. Eddy was accurate when she said, in 1883, that there were then a million, what a falling off there was!"

"In 1919 John R. Watts, business manager of the Christian Science Publishing society, made oath that the actual paid circulation of the Journal was 95,000. So there you have it. Rules of the church require members to be subscribers to 'The Christian Science Journal.' In 1919 the circulation totalled 95,000. Membership of the church must have been under that number as the sale is far in excess of membership while the number of subscribers is an indication of the possible maximum of church-members,"

"Director Dittmore wrote to his associates on the Board during 1918: 'The constant decrease in members admitted to the Mother Church since 1915, which has today reached a point where on April 20, we had 541 less than last year's spring admissions alone, must surely mean something.'"

Mrs. Eddy's attempt to rule the church from

her grave is set forth at length by Mr. Peabody. Another pertinent paragraph runs: "Let me speak of that variety of Christian Science fraud known to the law as suppression of the truth. The truth would kill Christian Science. As the truth cannot be controverted, it must be suppressed. An experience of upwards of twenty years' investigation and combatting Christian Science makes it necessary that I should be a little personal. I think I was the first to present publicly the facts of Mrs. Eddy's life quite plainly and to call a spade a spade. The discovery, in the regular performance of professional duty, of her reckless mendacity, her heartless cruelty, her utter selfishness, her colossal greed, was astounding, and I deemed it my bounden duty to make it public. In consequence I became acquainted with Christian Science methods of suppressing what they cannot refute. . . . If my charges publicly made and called to Mrs. Eddy's attention had not been true, if her life and reputation had been such that she had dared submit them to the searching scrutiny of a court of law, she most surely would, and should, have called me to account; but she knew the facts to be far worse than I had stated them and sought only my suppression."

This volume should be in the hands of every doctor. Especially now that the annual crop of pro-quack legislation is about due for its winter parade at Springfield AND BEFORE THE VARIOUS STATE LEGISLATURES! In this volume the medical profession and the suffering public has a parcel of T. N. T. to launch at these ever recurrent cultists. It is a rare weapon to put in the hands of all anti-charlatans!

Fleming H. Revell Company, publishers, 158 Fifth Avenue, New York; 17 N. Wabash Avenue, Chicago. Order from your book seller or the publisher. Price \$3.50.

HOW TO BUILD COMMUNISM WITH NON-COMMUNIST HANDS

Nadeshda Krupskaja (Lenin's widow), writing in Pravda, official Moscow Communist party organ, April 9, 1924, particularly in reference to Pokdovskii's scheme to accomplish the final establishment of positive atheism by using "an enlightened, or purely rationalistic religion" as a "wedge" to drive out real religion, reveals a

maxim of Lenin's that applies not only to Communist efforts to wipe out religion by working for atheism under false pretense of religion, but to the entire legislative strategy of the Communists. She says:

"Our duty is to apply in practice the maxim of Vladimir Ilich (Lenin): 'We must know how to build Communism with non-communist hands'."

In the columns of this JOURNAL we have repeatedly called the attention of our readers to the workings in this country of the communists, bolshevists and Russian propagandists and their application of their theories as applied to the practice of medicine. The recent Sheppard-Towner Act was borrowed from Russia whose system of maternity administration is so highly praised by the Children's Bureau at Washington. The methods used by the proponents to secure the Sheppard-Towner legislation so exactly parallels the above that we cannot refrain from calling our readers' attention to the coincidence.

The American public have a right to know who is Mme. Kollontai so highly praised by the United States Children's Bureau publication.

In the first place, Mme. Kollontai's first name is Alexandra. Congressman Layton, commenting recently, remarked that "the Sheppard-Towner Maternity Act may be traced to the Children's Bureau, created in 1913, chiefly through the propaganda of *Madame Kollontai, a Bolshevik, now enjoying the connubial bliss of an eighth husband.*"

Of the Kollontai portfolio the ultimate of the ethics and economics is abolition of the marriage bond; the advocacy of promiscuity as a relief from prostitution; the elimination of the badge of honor to children born in wedlock and the limitation of the population by birth control as a war prevention process; the feminists' plan of directly removing the legal discrimination of women by their refusal to bear children, save when, where and how they will; with ready relief for quick conception and libido, free and unconfined.

As portraying the numerous activities and doctrines promulgated by Mme. Kollontai we quote *The Woman Patriot* as follows:

Alexandra Kollontai, head of Russia's Maternity System under the Czar; author of "the most comprehensive study of maternity benefits

and insurance in any language," according to the United States Children's Bureau publication, "Maternity Benefit Systems in Certain Foreign Countries" (page 175); who is now Bolshevik Commissar of Public Welfare, will occupy a place in history second only to that of Judas when the uncensored historian of the future investigates the Russian Revolution. Hundreds of books have been published on Bolshevism. Practically all *dodge* Alexandra Kollontai. A recent book on Russia prints a full page picture of Kollontai—without a word about her except her name and office. Why *Is it because Alexandra Kollontai's activities, if fully revealed to the world, would discredit Feminism everywhere and prove it a greater menace to both the family and the State than any other form of Socialism?*

The Kollontai material would fill a volume. She is undoubtedly "the most comprehensive" revolutionist in the world.

MEETING OF THE AMERICAN MEDICAL EDITOR'S ASSOCIATION

There will be a meeting of the American Medical Editor's Association in New York in October. The officers of the association are: President, Charles J. Whalen, M. D., Chicago; vice-president, Malford Thewlis, M. D., New York City; secretary, F. H. McMechan, M. D., Avon Lake, Ohio. The meeting is to be held during the week of the Clinical Congress of Surgeons and the Eastern and Midwestern Anesthetists which are to be held in Philadelphia, October 26 to 30.

SUBSCRIBE TO THE LAY EDUCATIONAL FUND

IF THIS CONSTRUCTIVE WORK IS TO CONTINUE FUNDS MUST BE PROVIDED.

The fund subscribed a year and a half ago by a comparatively few doctors, for the purpose of inaugurating the Lay Educational Bureau of the Illinois State Medical Society, is exhausted. Not one penny of the original fund was injudiciously spent. Results far-reaching in importance to the medical profession have thus far been accomplished by the Lay Educational Committee.

If the valuable work is to continue, additional money must be forthcoming. Second appeal for

subscriptions for this worth while enterprise was mailed to members of the profession a short time ago.

The lay education campaign cannot be prosecuted without funds; it must be supported by popular subscription. It is hoped that every doctor will subscribe to this worthy cause. Serious disease diverted from the incompetent will result in the saving of thousands of lives and will prevent much permanent invalidism.

This campaign will achieve two great objectives. A gradual, but ultimate restoration of the medical profession to its merited place in the public sympathy and confidence and the inestimable benefits to humanity through the consequent prevention of disease and the preservation of life.

For the convenience of those who have mislaid their letter of appeal from the State Society, we hereby reproduce the pledge card:

Please sign and mail to the Illinois State Medical Society.

To the Officers of the Illinois State Medical Society and Members of the Council:

"I am in accord with the educational campaign, unanimously adopted by the House of Delegates of the Illinois State Society at the

1922 meeting and the plan recommended by the Council of the Society, and as evidence of my desire to cooperate with the officers of the council and of the State Society, I hereby enclose my check for \$. to aid in defraying the expenses thereof:

MAKE CHECKS PAYABLE TO THE ILLINOIS STATE MEDICAL SOCIETY.

Name M. D.
Street
City County

Sign the above pledge card, make out a check payable to the Illinois State Medical Society and mail both in an envelope addressed as follows:

From

.....
.....
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ILLINOIS STATE MEDICAL SOCIETY,
c/o Cashier, Sheridan Trust and Savings Bank,
4738 Broadway, Chicago, Ill.

Below is a list of subscribers from Chicago and Cook County to the Lay Educational Fund as per letter recently sent physicians soliciting funds and cooperation.

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 Harold Swanberg, Quincy
 C. D. Swickard, Charleston
 H. R. Sword, Milledgeville
 R. O. Taylor, Table Grove
 R. Tharp, East St. Louis
 G. Taphorn, Alton
 J. S. Templeton, Pinckneyville
 Chas. D. Thomas, Peoria
 L. M. Thompson
 T. H. Trainor, Maple Park
 Edward Tripple, O'Fallon
 Oscar W. Tulisalo, Rockford
 H. M. Voris, East St. Louis
 T. H. Wagner, Joliet
 Geo. A. Wash, Gibson City
 L. J. Weir, Marshall
 Whiteside County Medical Society
 R. R. Whiteside, Moline
 F. W. Wilcox, Minonk
 E. C. Williams, Downs
 A. A. Wilson, Davis
 L. H. Wiman, LaMoille
 Winnebago County Medical Society
 C. E. Woodward, Decatur
 C. F. Woodward, Decatur
 Nelson A. Wright, Manito
 W. T. Ziegler, Canton

DOCTORS WHO SERVED ON EXEMPTION AND APPEAL BOARDS IN THE WORLD WAR

ATTENTION ILLINOIS DOCTORS

After a year's effort through military channels, both in Springfield and Washington, the Committee on Medical History of the Illinois State Medical Society has succeeded in getting what purports to be a list of the physicians that served on the various exemption boards.

Investigation shows many errors in the personnel of the boards, and in order to have the data as accurate as possible for the forthcoming issue of the Medical History we are asking that every physician that served on the exemption boards, appeal boards, etc., during the late war, send their name, address and the number of the board on which they served to the Committee on Medical History, 25 E. Washington Street, Chicago, Illinois.

TO THE MEDICAL PROFESSION OF CHICAGO AND COOK COUNTY:

Send in your data early on the blanks now being mailed to every doctor for the 40th Annual Edition of the Chicago Medical Blue Book which will be published in January, 1926.

This is the 40th Anniversary of the Blue Book, and we urge every doctor in Cook County to give it his or her loyal support, to co-operate with us in our efforts to secure the data for the information contained in its pages. Its 40 years of service have proved its value to both the profession and the public.

It will take only a few minutes of your time to fill out the blank mailed you—only a few minutes but it will save many, many minutes for us. Multiply the time it would take us to obtain your data by that necessary for the same purpose for other busy doctors, who are tempted to lay the blank aside to await freedom from a thousand and one duties. The blank filled out and mailed will be off your mind and oh, such a help to us in compiling.

There are hundreds who reply immediately (perhaps you are one of them; if you are, we thank you) and other hundreds who must be written once, twice, three times and then maybe called over the phone for information we cannot verify otherwise.

Your immediate attention to the blank mailed you will aid us greatly in the big task we are soon to undertake in compiling the next edition.

McDONOUGH & COMPANY, Publishers,
416 S. Dearborn Street.

CLUB WOMEN GETTING WISE TO THE MENACE OF THE WOMEN'S LOBBY AT WASHINGTON

THE RESPONSIBILITY OF BEING LED

A FRIENDLY MESSAGE TO ORGANIZED WOMEN, BY
ONE OF THEM

MARGARET C. ROBINSON

Mrs. B. L. Robinson, President, Massachusetts Public Interests League,

All thinking people realize that the responsibilities of leadership are great. Most of us, however, are not born to be leaders, and such responsibilities do not fall in large measure upon the average woman. But equally great with leadership is the responsibility of being led. This is not so generally recognized, but it is a responsibility

that rests upon everyone who follows the leadership of others, as we all do to a greater or lesser extent. It is *our* duty to make sure that those who aspire to lead us are worthy to be followed, and that they are leading us in the right direction.

Organizations of every kind urge their leadership upon us. Never in the world's history has propaganda of all kinds been so rife. Every shade of opinion and every school of thought is organized and asks our support. The American woman is a marvel to women of other lands in her capacity for and enjoyment of organized activities. One result of this situation is that it is comparatively easy for a few ambitious women, eager to push some political measure in which they are interested, to reach with their propaganda hundreds of thousands of other women quickly and with little expense, through the organizations which they control.

A POWERFUL LOBBY WITHIN A LOBBYING CITY

There is at Washington an organization known as the Women's Joint Congressional Committee which has one of the most powerful lobbies in that lobby-infested city. It claims to represent 12,000,000 American women, and, with this claim, undertakes to bring enormous pressure on Congress. The organizations which this committee is said to represent are the American Association of University Women; American Federation of Teachers; American Home Economics Association; General Federation of Women's Clubs; Girls' Friendly Society of America; National Congress of Mothers and Parent-Teacher Association; National Consumers' League; National Council of Jewish Women; National Council of Women; National Educational Association; National Federation of Business and Professional Women's Clubs; National League of Women Voters; National Women's Christian Temperance Union; National Board of Young Women's Christian Associations; Service Star Legion.

Many of these groups have interlocking directorates, and a number of them interlock with some of the most radical and subversive organizations in the country. Florence Kelley, said to be the most influential woman in this combine, stated at a hearing in Washington: "We are now organized with a thousand ramifications. We have more interlocking directorates than business has." (Meatpacker hearing, May, 1921, p. 58.) Mrs. Kelley is a Socialist, ex-president of the

Intercollegiate Socialist League, a former lecturer at the Rand School of Socialism, secretary of the National Consumers' League, is a prominent member of that very radical organization, the Women's International League for Peace and Freedom, and belongs to several other of the associations mentioned above.

STATE MEASURES FAVORED BY COMMUNISTS

The three most important measures which this Joint Congressional Committee has backed are the Maternity Bill, the Education Bill, and the so-called "Child Labor Amendment." All three are measures for which a sentimental appeal can easily be made, of a kind warranted to have great effect. *All three are measures which have the enthusiastic support of practically all Socialists and Communists in the country.*

The reply is made to this charge that the fact that Socialists and Communists favor a measure does not discredit it, and that they are praiseworthy for supporting such legislation. This view is held by those who do not know that one of the strictest tenets of Socialists and Communists is that they shall strongly and consistently oppose what they consider "reform" measures. What they demand is the *destruction*, not the *improvement* of our present system. To improve the present system is to preserve it—therefore they oppose improvement. They have a term of contempt for those who desire to improve existing conditions—they call them "meliorists."

The official booklet, "Programs of the Young Communist International," issued by the executive committee of the Young Communist International, February 20, 1923, affirms:

"The militant program of the Young Communist International, however, cannot respect the exigencies of the capitalist economic system, nor be merely a means to eliminate the worst instances of the exploitation of the working-class youth. It must proclaim . . . the complete transformation of the conditions of juvenile labor, and its socialistic reorganization."

ONE SHOULD ASK THE REASON WHY

When, therefore, we find the Communist supporting a given measure, we have a right to ask whether they are doing so *because it fits definitely into their own program*. For instance, when we learn from the *Daily Worker* (Communist) of March 11, 1925, that the executive committee of the Workers' party (Communist) has sent out

instructions to "all the party's district organizers, foreign-language federation secretaries and the Communist and labor press to begin immediately intensive action to save the amendment" we can be certain that their primary object is not to "ameliorate" the evils of Child Labor but to work toward government control of the *labor, education, and maintenance of youth, which is a vital part of the Communist program.*

Communists confidently count on the support of women's organizations. On December 5, 1924, the *Daily Worker* (Communist) stated its "program" as follows:

"State legislatures must be compelled to ratify immediately the Child Labor Amendment to the Constitution; Capitalism's Congress and State legislatures must be compelled to pass laws providing full government maintenance of all school children of workers and poor farmers, without which, the Workers' party declares, a child labor law is useless."

GIVING A BILL A GOOD NAME

On the same page it stated its "policy," which includes "intensive agitation in women's organizations."

There is an old adage "Give a dog a bad name, and hang him." There should be a modern version, "Give a bill a good name and thousands will endorse it without investigation." The Maternity Bill is a case in point. This bill received the indorsement of the Executive Board of the General Federation of Women's Clubs. The first year it came before the Women's Clubs of Massachusetts, the sentiment in its favor seemed practically unanimous. It did not go through that year, so the next season it came before them again.

A popular club woman, ex-president of a large club, one of the women who *does not choose to be led unless she knows where she is going*, had taken the trouble to study this bill, and found much in it to disapprove. She therefore took every opportunity which offered to go before women's clubs to oppose it. As a rule her procedure was *merely to read the bill to her audiences.*

She said the faces of many of the women were a study. They would come to her afterward and say, "But surely *that* wasn't the Maternity Bill which you had read to us; *why, it didn't even mention mothers and babies!*"

"Oh no," she answered, "*it doesn't mention*

mothers and babies; it just tells how much of our tax money shall be taken from the Treasury, and how many political jobs shall be created at Washington—but *that is the Maternity Bill.*"

This experience was very salutary, and so many women, after informing themselves of the real nature of the bill, opposed it, that it was defeated in Massachusetts: *These women had been accepting leadership without investigation*, and without realizing their own responsibility in the matter.

During the summer of 1924, a woman greatly interested in good government spoke in a country church in New England on "Practical Patriotism." In the course of her talk she stated her conviction that the so-called Child Labor Amendment was fraught with danger to childhood and to our country. Several members of the local Women's Club were so amazed to hear her oppose this amendment that they invited her to speak to their club and explain her opposition more fully. In opening her talk at the club she said: "I understand that those of you who heard me speak at the church were very much surprised that I should oppose the Child Labor Amendment. I am going to ask all of you who have read this amendment to raise your hands."

Not a hand was raised! These good, conscientious women, supposing that *of course* a measure called "The Child Labor Amendment" must be a good thing, especially as it was indorsed by organizations to which they look for leadership, had not taken the trouble to read it!

So canny are clever propagandists in giving appealing names to their socialistic, bureaucratic measures, that it is a tolerably safe rule *to beware of a bill or an amendment with a sentimental name.* A good bill doesn't need a pretty name—it can stand on its own merits; a bad bill does need a good name, to impose upon the public—and it frequently gets it!

THE TROUBLE OF BEING IGNORANT

Women in general have shown themselves very easily influenced to support Federal bureaucratic measures if the appeal comes to them in a humanitarian guise. This fact gives special point to the remark of a noted Englishman who was asked to address a convention of a women's political organization in Washington soon after the passage of the Nineteenth Amendment. So little accustomed are American women to plain

speaking by the opposite sex, that his audience was astounded when he said to them: "The trouble with you is that you are so ignorant. Unless you inform yourselves, you will be a menace to your country."

It is, I am convinced, because women have *not* informed themselves on vital questions of government but have followed blindly the path their radical leaders have chosen, that we see them today, as a well-known club woman has expressed it, "busily and gaily doing what they can to destroy their own and their fellow citizens' constitutional freedom, doing all that they can, through the multiplying of bureaus and the strengthening of bureaucracy, to change our government into a democratic autocracy, to impose its will upon the States and the people." In so doing, they are working to transform themselves and the rest of us from *citizens* into *subjects*.

How shall we define bureaucracy? It is the substitution of government by political appointees for government by elected representatives. It is, therefore, the enemy of self-government, which is the cornerstone of our Republic. George Washington warned his countrymen that it is "the ordinary weapon by which free governments are destroyed."

THE MENACE OF THE COMMUNIST

A very serious reason why every patriotic person, man or woman, should combat the trend toward bureaucracy and paternalism is that the resulting interference in the personal affairs of the people tends to encourage hatred of our government. This is a curse from which our country has happily been free, because until recently our government at Washington has interfered very little with the right of the people to govern themselves. The enemies of our country who desire to see our government overthrown encourage every tendency toward centralization, *because* it will arouse the antagonism of the people. The Communist party of America, which is the open enemy of our government, is on record as saying: "The American Government . . . has grown into a mammoth monster of centralization, similar to that of the old European governments. . . . A centralized government which interferes in the daily affairs of the working class, is the basic condition . . . the fundamental condition for the formation of a nationwide political mass party—the birth of a (Communist) Labor party."

How can any true American contemplate without dismay the substitution of a Socialist bureaucracy in place of our great Republic? The change is, however, taking place before our eyes, and nothing can stop it but an awakening of the people to its dangers.

A great modern statesman says of this destruction of self-government in the United States: "The most distressing thing about it is that no one seems to care." To me, the most distressing thing about it is the part women's organizations are playing in hastening the destruction.

A distinguished author who is also a prominent club woman, Mrs. George Madden Martin of Louisville, Kentucky, is so alive to the dangers of women's unthinking acceptance of the leadership which is working to replace self-government with bureaucracy that she has written an open letter to her State Federation in which she says: "We organized club women, with our eyes centered through the eyes of our national leaders upon Washington and functioning there that this highly efficient lobby which we are helping to maintain have, in less than four years, gotten behind twelve nationals . . . all twelve asking for Federal control as opposed to their control; all twelve straight measures of centralization and power; and all out-out-out pleas for paternalism."

In an illuminating article on "American Woman and Representative Government" in the *Atlantic Monthly* for May, 1925, Mrs. Martin says:

"Now it may be that the majority of us women here in the United States are really convinced that our powerful institutions as now existing are unfitted longer to carry on government as desired by the people. It may be that the majority of us women are ready to abandon that 'dispensation of individual liberty which the Constitution of the United States offers them,' though myself I do not believe it.

"What we women cannot do, however, is make the Constitution a working agent of another, even if a desired system. To have the one, we must first abandon or destroy the other. . . .

"Let us women be as frank here as we are about our lobbying and our group coercion. If the majority of us are agreed against our present system in government, let us say so and get about the next step, which is to declare as frankly what we do want. But at once to ratify a system

through a voluntary acceptance of citizenship under the system, and the while be boring from within to destroy what we are ratifying—this would seem to be the part of the witless, the tool, or the enemy."

REASON WHY SOME UNITS UNITE

A distinguished historian, Professor Wilbur C. Abbott, of Harvard University, in his remarkable book, "The New Barbarians," says:

"Apropos of the entrance of women into political life, it has been urged that one reason for the demand for creation of so many new bureaus is that the dealers of this latest addition to our electorate, finding it impossible to secure as many positions as they require from the present holders of office, seek to create new ones which they may enjoy. This, if it is true, explains many things in our present situation." It does, indeed—it explains, for instance, why the bureaus which they plan and work for are such as women obviously seem fitted to manage—the Women's Bureau, the Children's Bureau, an Education Bureau, et cetera.

The radicals—the out-and-out proletarians—want bureaucracy because it tends to destroy our form of government. Political women want it because it offers jobs for women in politics. The two forces are not yet openly allied, but, as Professor Abbott points out, their combination is inevitable and is rapidly approaching. The Socialists, Communists, and the Women's Joint Congressional Committee were a unit in working for the Twentieth Amendment. They were a unit in working for the Maternity Bill. They were a unit in working for the Education Bill. When the schools of our country, the youth of our country, and the care of maternity are all directed by bureaus at Washington, we shall have arrived at the condition concerning which our great historian, John Fiske, warned us in his "Critical Period of American History":

"If the day should ever arrive (which God forbid) when the people of the different parts of our country should allow their local affairs to be administered from Washington—on that day the progressive political career of the American people will have come to an end, and the hopes that have been built upon it for the future happiness and prosperity of mankind will be wrecked forever."

Bureaucracy is, besides, the most expensive

form of government. Under it taxes can be and are raised indefinitely and this, too, will tend to increase ill-will and hatred toward our government.

A bureau, once formed, seems to be immortal. Its principal aim is to perpetuate itself. As President Coolidge has pertinently said: "It is a difficult task to separate people from the Federal service." A less dignified commentator says: "It is easier for 10 camels, 25 elephants, and 16 giraffes, all marching abreast, to pass through the eye of a needle than for a Federal officeholder to give up his job." Should not American women, then, be a little less ready to follow their leaders in indorsing measures which would enormously and permanently increase the size, cost, and menace of bureaucracy?

"I have said to various members of the League of Women Voters: 'Do you really want to change our American form of government into a bureaucracy, after the object lessons which Germany and Russia have given us of the evils of that form of government?'" Some of them do not know enough of government to understand what I mean, but others have said indignantly: "Of course not. I don't believe in these bureaucratic measures." "Then," I say, "do you think it is honest to allow your leaders to count you as indorsing them, and to hold you as a threat before Congressmen as one of the 12,000,000 whom they represent?" I have never yet found one who had an answer to this question.

For our own self-respect, we women should rejoice in every evidence that not all organized women can be led like sheep, but that some do their own thinking.

During the campaign in Massachusetts for and against the Child Labor Amendment, a debate was held at the Y. W. C. R. rooms in one of the large cities. Before an audience of more than 150 women, speakers stated the arguments for and against the amendment. At the close of the debate the presiding officer, herself an advocate of the amendment, said: "Now we will take a vote on the question. All those in favor please raise their hands." To her great amazement, evidently, only a dozen hands were raised. Without concealing her annoyance she said sharply: "Vote! Vote! Why don't you vote?" Thus urged a few more hands were slowly raised, but not enough to please her. "Well, then," she said, "I'll vote!" Raising her hand high, she kept it

up while still urging her hearers to "vote." At last, when the situation was rapidly becoming ludicrous, she counted the raised hands, which numbered 23. Then she called for the negative votes, and when she saw their overwhelming majority, said crossly: "It's no use counting them." It probably took some courage for these women to vote against the indorsement of their association, and against the attempted coercion of their president, but they stood by their convictions and did it.

As women begin to understand more clearly the real nature of the legislation which the women's lobby at Washington is demanding, many of them are rebelling against such leadership. There has been a veritable "Declaration of Independence" on the part of certain club women of New Hampshire, which is truly refreshing. In New Hampshire, as in other States, women have been divided into two camps over the Child Labor Amendment. The legislative chairman of the New Hampshire Federation of Clubs happens to be a member of the New Hampshire legislature, and also a bitter partisan for the amendment. The impression was given, either intentionally or unintentionally, that she represented the State Federation in advocating the measure, and she constantly gave out to the press extraordinary propaganda. One of her statements was that 89,000 children were working in the cotton mills in Georgia. Statistics show that the Georgia mills employed only 45,000 workers, including men, women, and children! Her statements, many of them easily disproved, reacted to the discredit of the State Federation and protests were voiced by club members.

The Citizens' Committee which opposed the amendment in New Hampshire included in its membership some well-known club women who refused to allow the public to be misled as to their view on the subject. They issued two leaflets in protest. The first said: "The Women's Committee is bringing pressure to bear on State legislatures and the general public for ratification. They claim a backing of twelve million women. Whence comes the authority for this claim? We women at home know that little if any effort has ever been made to ascertain our convictions on the subject. But we women, the rank and file of the membership, alone hold the authority for such backing. We have not given it. In New Hampshire we cannot find that any State organ-

ization has taken action in favor of the amendment. In view of these facts, the claims of the Women's Committee are absurd if not actually dishonest."

The second leaflet takes up the local issue in vigorous fashion. It says:

"Has the Legislative Committee of the New Hampshire Federation of Women's Clubs authority to state that 12,000 club women of New Hampshire endorse ratification of the 20th Amendment?"

"No!"

"The question of ratification has never been presented at a Federation meeting. Neither has there been any general referendum on the question among the 12,000 club women.

"The only official indorsement of the 20th Amendment, in the name of the Federation, has been by a vote of the Executive Board, at a meeting in November, 1924. The Executive Board consists of 28 members (5 members constituting a quorum). This vote of indorsement was in nature of a recommendation only; it had no authority to commit the 12,000 club women of the State to this legislative measure. The method of obtaining such authority for influence with the Legislature is fully provided for.

"At the annual meeting of the Federation in Milford, May, 1923, the duly elected delegates of the federated clubs voted as follows: 'That all legislation pertaining to those matters which have engaged the attention of the New Hampshire State Federation be presented at the Presidents' Conference to be held early in January the year of the biennial session of the Legislature.

"Endorsement of any measure at this meeting shall direct the future action of the Legislative Committee of the New Hampshire State Federation."

(Secretary's Record)

"In an editorial in the December Federation Bulletin, each club president was reminded of this ruling and requested to conduct a full discussion of legislative measures (including the Amendment).

"A vote of endorsement of the club will instruct the officials who attend the Presidents' Conference to vote for them (i. e. legislative measures) as Federation measures."

(Federation Bulletin, December, 1924, p. 6.)

"On January 28, 1925, the Presidents' Conference was held in Concord.

"THE EXPECTED VOTE WAS NOT TAKEN

"There was, however, evidence of decided opposition to the Amendment on the part of club presidents in attendance.

"According to the Federation ruling above quoted an endorsement at the Presidents' Conference directs the action of the Legislative Committee; in the absence of such endorsement, the Legislative Committee has no authority under the Constitution of the Federation, to pledge 12,000 members in favor of any legislation, even with the approval of the Executive Board.

"This statement is made in the interests of fair play to the members of the Legislature, and of fair play to the 12,000 club women of New Hampshire, who are entitled, through instructed representatives, to express their majority opinion, and thus to govern the activities of the Legislative Committee of the New Hampshire Federation of Women's Clubs."

These women realize *the responsibility of being led*; they refuse to be led in what they believe to be the wrong direction, and, what makes them a real power, they hold those who assume to speak for them strictly to account for their leadership.

It is to the growth of this spirit among organized women that we must look for a check on the attempt by their radical leaders to undermine the principles on which our great Republic is founded.—*Dearborn Independent*.

NO CONSTITUTIONAL POWER "TO STANDARDIZE CHILDREN"

"THE CHILD IS NOT THE MERE CREATURE OF THE STATE"—U. S. SUPREME COURT

The Supreme Court of the United States, June 1, in the Oregon School Cases (Nos. 583 and 584, October Term, 1924) declares:

"The fundamental liberty upon which *all* governments in this Union repose excludes *any general power of the State to standardize its children.*" . . . (Italics ours.)

Thus the "utmost possible uniformity" in child welfare legislation, sought by the salaried bureaucrats and the social workers, and approved by President Coolidge because he notes "important public men and women" advocating it has not only been overwhelmingly rejected by three-fourths of the

American people in their defeat of the miscalled Child Labor Amendment, but their effort "to standardize children" is declared by the Supreme Court to be in conflict with "the fundamental liberty upon which all governments in this Union repose."

It appears that "important public men and women" have been greatly misled, and that the common people, following their common sense and natural instincts in refusing to transfer guardianship of their children up to 18 to a central bureau at Washington, have kept closer to the Bill of Rights than many of the "important public men and women."

The decisive section of the Supreme Court opinion in the Oregon School Cases (from the official text) follows:

No question is raised concerning the power of the State reasonably to regulate all schools, to inspect, supervise and examine them, their teachers and pupils; to require that all children of proper age attend some school, that teachers shall be of good moral character and patriotic disposition, that certain studies plainly essential to good citizenship must be taught, and that nothing be taught which is manifestly inimical to the public welfare.

The inevitable practical result of enforcing the Act under consideration would be destruction of appellees' primary schools, and perhaps all other private primary schools for normal children within the State of Oregon. Appellees are engaged in a kind of undertaking not inherently harmful, but long regarded as useful and meritorious. Certainly there is nothing in the present records to indicate that they have failed to discharge their obligations to patrons, students or the State. And there are no peculiar circumstances of present emergencies which demand extraordinary measures relative to primary education.

Under the doctrine of *Meyer v. Nebraska*, 262 U. S. 390, we think it entirely plain that the Act of 1922 unreasonably interferes with the liberty of parents and guardians to direct the upbringing and education of children under their control. As often heretofore pointed out, rights guaranteed by the Constitution may not be abridged by legislation which has no reasonable relation to some purpose within the competency of the State. The fundamental theory of liberty upon which all governments in this Union repose excludes any general power of the State to standardize its children by forcing them to accept instruction from public teachers only. The child is not the mere creature of the State; those who nurture him and direct his destiny have the right, coupled with the high duty, to recognize and prepare him for additional obligations.—*The Woman Patriot*.

DRUGGIST WINS DOPE CASE

UNITED STATES COURT OF APPEALS UPHOLDS RIGHT TO FILL PRESCRIPTIONS

ST. LOUIS, Aug. 7.—Licensed druggists have authority under the Harrison law to fill as many prescrip-

tions for narcotics as are issued by registered physicians, the United States Circuit Court of Appeals held here in reversing a five-year sentence of Charles Eckert, druggist. Eckert was convicted in December, 1923, of selling narcotics to addicts.

The opinion upheld the defense of Eckert, who contended he merely followed the law in filling prescriptions brought by patients of a physician.

COMMUNISM CAUSING INCREASE OF WOMEN SUICIDES IN RUSSIA

BY DR. FREDERIC FUNDER

(Vienna Correspondent, N. C. W. C. News Service)

VIENNA, July 27.—Evidence that the Communist rulers of Russia have attained a degree of success in their campaign to break down family ties is seen in recent statistics showing an enormous increase in the number and proportion of women suicides in that country and still more significant fact that more than twenty-five per cent of such suicides were housewives. The statistics are published in the "Pravda," leading Russian Communist organ. Having been robbed of their Christian faith and being compelled to live under domestic conditions containing no guarantees of peace and orderliness, thousands of women have chosen the alternative of self-destruction.

Statistics of suicides under the Czars showed that one woman died by her own hands to every four men. Today the ratio is two women to every three men. The number of suicides reported from Russia is more than fifty per cent greater than from Prussia—a country in which the number of such cases is notoriously large.

A recent analysis of the occupations of women who committed suicide in Russia gave the following results: Of every hundred female suicides six were prostitutes, seven were domestic servants, twelve were school girls, fourteen were employed, nineteen were students or professional women, and twenty-eight were housewives.

WHAT IS PASTEURIZATION?

The last edition of Webster's New International Dictionary defines pasteurization as "a process devised by Pasteur for preventing or checking fermentation in fluids, such as wines, milk, etc., by exposure to a temperature of 55°-70° C. (131°-158° F.). While this treatment does not destroy spores, it avoids the injurious effects that might accompany complete sterilization." The Standard Dictionary gives a similar definition limiting the temperature range to 144°-149° F. Federal, state and municipal laws and regulations give other definitions which specify not only the temperature of the heat treatment but also the minimum, and in some cases the maximum, period of time that the treatment shall be applied to milk that is to be sold as pasteurized milk.

The process originally devised by Pasteur to check fermentation in wine and beer is now chiefly used, in the United States at least, to destroy patho-

genic microorganisms in milk without affecting its taste or seriously injuring its original food value. For this purpose it would seem to be possible to define pasteurization within rather narrow limits. The tubercle bacillus may be called the determining organism since the other pathogenic microorganisms apt to be found in milk are destroyed more easily by heat than is this bacillus. Different investigators have found the tubercle bacillus to be killed at different temperatures in the same period of time, and in different periods of time at the same temperature. Such conflict of laboratory testimony has made it difficult to set adequate standards for commercial pasteurization.

In 1910 and succeeding years the New York Milk Committee, a group working to improve the milk supply to reduce infant mortality in New York City, found the need for an authoritative standard for pasteurization. Its appointed body of experts, the National Commission on Milk Standards, after a thorough study and investigation unanimously recommended a temperature of 145° F. for 30 minutes. This standard was endorsed by many authorities, widely accepted by sanitarians, and made a part of many official regulations. There have been continued attacks upon this standard inspired by both science and commerce, a few attempts to raise it and many, especially vigorous, to lower it.

If the only effect of heating milk were to destroy the bacteria in it, pasteurization would probably not be a subject of controversy. However, heat treatment affects the apparent cream volume, increasing or decreasing this apparent volume above or below that of untreated milk according to the heat treatment given. The consumer with no other obvious criterion judges the quality of milk largely by the depth of the visible stratum of butter fat. He will usually regard milk with little apparent cream as less desirable than milk which shows a greater layer of cream but which as a matter of fact may contain less butter fat. Until the public has learned to accept a more reasonable and surer standard of milk quality than the *visible* fat content the dealer naturally wants the cream content to appear as large as possible. While the sanitarian is also concerned with the apparent cream volume, his first consideration is that milk given commercial heat treatment be rendered non-infectious, that is, pasteurized in the public health sense.

The standards of the New York Milk Commission in the opinion of health authorities were adequate for public health protection. With the development of milk supervision and the improvement of pasteurizing machinery susceptible of more delicate and certain control it seemed right to examine the matter anew. An opportunity to do this was created by the Borden's Farm Products Company in 1921. This concern made available funds, personnel and facilities for a study under the direction of Dr. Charles E. North, who invited others to cooperate with him. The report of this study has

now been published by the U. S. Public Health Service and is reviewed in this issue.

At the Detroit meeting of the American Public Health Association last year the Association endorsed in a formal resolution the pasteurization of milk as "the most practicable and rapidly carried out measure for the safeguarding of the milk supply." The resolution did not prescribe any standard for pasteurization, leaving this phase of the matter for the consideration of the Committee on Milk Supply of the Sanitary Engineering Section. This committee deferred its recommendation of standards for safe pasteurization until the completion of the experiments carried on by Dr. North and his associates. Whether or not the Committee on Milk Supply or the American Public Health Association will endorse the recommendations of this group remains to be seen. The matter will doubtless be considered at the St. Louis Meeting this fall. Meantime, public health officials are advised to await the report of the Committee on Milk Supply before rewriting their milk regulations.—*Am. Journal of Public Health.*

THE ORIGIN OF SYPHILIS

Charles Greene Cumston, M.D., of Geneva, Switzerland, in *Medical Journal and Record* says: Since the death of Iwan Bloch, the protagonist of the American origin of syphilis following the teachings of Professor Rollet, of Lyons, and his collaborators, Professor Sudhoff has attempted to accumulate proofs and arguments in favor of the precolumbian presence of the disease in Europe. Now Professor Gumpert comes to the front and taking up separately in succession the twenty-two propositions put forward by Sudhoff to assert his point of view, he shows beyond question that every one of them can be contradicted and this he proceeds to do. We have always regarded the precolumbian doctrine of Sudhoff as the weakest production of this learned historian of medicine.

Within the last few months Professor Barduzzi, of Sienna, has emitted the opinion that syphilis in Italy dates only from the epidemic of 1493. He maintains that the Spanish contracted the disease in America and brought it back with them to Europe. As proof of his assertions, Barduzzi puts forward the following documents: 1. Oviedo affirms that in 1493 he saw at Barcelona the companions of Columbus who had followed him on his three voyages to America and that he was able to verify the American origin of the new affection, which was horrible, contagious and lethal. With the exception of the Spanish this disease up to that time had not attacked any European. The soldiers composing the army of Gonzalve of Cordova transported the disease to Naples, where it was transmitted by women to the Italians and French of the army of King Charles VIII. 2. Another witness whose testimony has weight is Rodrigo Diaz, who states that the epidemic appeared in Barcelona the year that the companions of Columbus returned from their first voyage. 3.

The testimony of numerous Italian writers of the sixteenth century, among them Benedetti, Cunano, Gibini, Leonicino, Montagnana, Torelli, Benivieni, Vigo, Mattioli, Fracastoro, Brassavola, Fallopio, not to mention others, who all proclaim the modern origin of the disease. Hence, it is, according to Barduzzi, impossible to deny the evident relationship existing between the appearance of syphilis in Europe, and especially in Italy, in 1493, and the return of the Portuguese boats of Columbus. Contrary to Sudhoff's and Sigerist's conclusions—both being believers in the ancient origin of syphilis in Europe—Barduzzi maintains that this opinion is not built upon a solid basis and offers no really serious proof that the disease existed either in antiquity or the medieval epoch before 1493.

Of great historical interest is the recent work of K. Dohi, of Tokio, who has studied the historical aspects of syphilis in Europe and in the Orient—India, China and Japan—as well as the ancient medical literature of these countries. Leaving aside Dohi's remarks on the origin of European syphilis which are based on Procksch's and Bloch's writings—the earlier important writings of Professor Rollet, of Lyons, being probably unknown to Dohi since he does not refer to them—we would briefly consider what the Japanese writer has to say in respect of the discoveries and opinions emitted on the so-called syphilitic changes observed in skeletons belonging to the stone age. He refers to Adachi's discoveries of Japanese skulls and tibias belonging to this period, but with Minami and others, it must be admitted that these skeletal specimens are not convincing.

Dohi carefully studies the ancient Chinese physicians of the precolumbian period and refers to some more or less singular texts relating to leprosy, genital ulcers—perhaps *ulcus molle*, etc. Ancient Japanese medical literature is not more explicit and a manuscript studied by Scheub and Kayama—upon which much hope was founded—has proved not to be authentic. The same applies to India. In this country the word for syphilis is *phisango*, and this does not occur in any text prior to 1495. Here again, all proof is lacking that syphilis existed in the Orient before the return of the crews of Columbus from America to Spain.

There would seem to be some evidence that syphilis developed in India after 1498, with the crews of Vasco de Gama's fleet. In China it was just described by physicians about 1520. The disease probably was introduced via Canton before the arrival of the Portuguese in China, probably by that intermediary of Chinese coming from India or the Malaysia islands. Syphilis appears to have invaded Japan before 1543, by the intermediary of Japanese pirates who ravaged Malaysia seas and coasts of China, or by the inhabitants of the Lioukiou archipelago. But syphilis developed in Japan before the Portuguese came there.

Dohi also gives a good summary of the writings of the Chinese and Japanese physicians of the sixteenth century and shows that they were familiar

with hereditary syphilis, not to mention the ordinary manifestations of the disease. The Japanese physicians belonging to the Chinese school, as well as those belonging to other schools, have left us many descriptions of syphilis, in many respects quite as exact as those given by European physicians of the epoch.

ANTIQUITY OF SYPHILIS

It is generally stated that syphilis was imported in 1495 or 1496 by the sailors of Christopher Columbus on their return from Spain. Certain authors, however, within the last twenty years have opposed, with the aid of authoritative arguments, this opinion of the American origin of syphilis, which did not appear until a generation later, about 1535, and which they consider based upon faulty testimony, for commercial motives. In a communication that he made to the Congress of Medicine at London in 1913, Sudhoff declared himself to be a firm believer in the antiquity of the disease. *La France Médicale* has summarized as follows this learned communication:

In recent times, and also toward the close of the Middle Ages, prehistoric bone fragments were discovered apparently showing syphilitic lesions. But all the while certain experienced scientists, such as Lannelongue and Gangolphe, were not altogether convinced. Moreover, it is strange that only those bones found in the American tombs of the seventeenth and eighteenth centuries presented syphilitic lesions. This leads us to believe that it may have been the Europeans who carried syphilis to America. The troops of Charles VIII, perfectly disciplined, never gave themselves to any excesses and it is probable that the epidemic with which they were smitten was an epidemic of typhus. In all the so-called syphilized regions one recognizes the long existence of the disease; the popular speech, the municipal edicts, the therapeutic measures prove it. It was the malady of *mauvais boutons* treated as today by rubbing with mercurial ointment. It was already established in the works of the alchemists of the twelfth century that mercurial ointment was the treatment, and the manner of applying it, its therapeutic action and its special results such as salivation are described. The use of the mercurial rubbing enables us to distinguish leprosy from eczema and from syphilis, a constitutional disease. The Italian physicians of the twelfth and thirteenth centuries had begun to take up the problem, and in the thirteenth and fourteenth had communicated the results of their labors to their colleagues in the south of France. The alchemical medicine of Arnaut de Villeneuve bears witness to this.

It was known even in the fourteenth century that the sexual act was the usual avenue to syphilis, the *gros mal* of the courtesans of the south of France. The Italians, rendered furious by the invasion of Charles VIII, translated *gros mal* as *mal franzoso*, as an expression of their anger. The expression spread like wildfire. In Germany the disease came

to be known as *Franzosenkrankheit*, French disease, and in certain cities free treatment was given sufferers in places known as *maisons françaises* by the people. This expression of *mal français* constitutes, according to Professor Sudhoff, a title of glory for the science of medicine in the south of France, which tore the veil away from the face of this insidious disease and taught the earliest prophylaxis and cure.—Translated from *Æsculape*.

THE EARLIEST MEDICAL JOURNALS

Dr. Leartus Connor states (*J. A. M. A.*, June 14, 1884) that the first medical journal was a Paris publication edited by Nicholas de Blegny. It appeared in 1679. The first medical journal published in this country was apparently a translation of the *Journal de Médecine Militaire* issued in Paris from 1782-88. It appeared in New York City in 1790. The first really American medical journal was a quarterly, *The Medical Repository*, published in New York from 1797-1824. The second American journal, the *Philadelphia Medical Museum*, was born in 1804 and lived only seven years. The *Baltimore Medical and Physical Recorder* was the third American journal, issued from 1808-09. Boston's first medical journal was the *New England Journal of Medicine and Surgery*, 1812-27. This quarterly was consolidated in 1828 with the *Boston Medical Intelligencer* to form the *Boston Medical and Surgical Journal*, still being published.

Correspondence

PROTEST ON THE RULING OF NARCOTIC DIVISION OF THE INTERNAL REVENUE

August 13, 1925.

To the Editor: The inclosed resolutions were adopted by the House of Delegates of the Illinois State Medical Society at the annual meeting in Quincy. According to the instructions of the House of Delegates, copies of these resolutions have been sent to the President of the United States, the Secretary of the Treasury, Committee on Finance of the United States Senate, Committee on Ways and Means of the House of Representatives at Washington, the Senators and Representatives in Congress from Illinois.

It is desired that every County Medical Society in Illinois take some official action in regard to these resolutions and aid in whatever way possible in seeing that these conditions be remedied at an early date. It is especially desirable that in those counties where the Senator or Representative resides he be interviewed by

a Committee from the Society so that he may know the attitude of the profession in general toward a reduction in the Narcotic Tax and the proposed deductions from the Income Tax of physicians for the money spent in post-graduate work and attending medical conventions.

The increase in the tax under the Harrison Narcotic act was a war time measure and we were informed that the increase was made to help provide money necessary to meet the expenses of the War. We are informed at the present time the President is especially anxious to reduce taxes on account of the surplus of the federal treasury.

In regard to the taxation of physicians traveling expenses we are informed that the Revenue Acts of 1921 and 1924 impose no specific tax on the traveling expense of the physician. They do especially provide that traveling expenses incurred in pursuit of a trade or business may be deducted before the income tax is computed and are therefore, tax exempt. The Commissioner of Internal Revenue Rules however that traveling expense incurred in attending meetings of medical organizations may not be so deducted.

In order that a clear understanding of the matters contained in these resolutions may be understood, I would suggest that County Secretaries write to Doctor William C. Woodward, Secretary of the Bureau of Legal Medicine and Legislation of the American Medical Association, 535 North Dearborn Street, Chicago, for a reprint on the "Physician's Claims Under the Federal Tax Reduction Plan," which is just off the press.

Each State Society is doing a similar work at this time so that protests against these taxes can be made simultaneously from all parts of the country. It is hoped that every county medical society in Illinois will do its part in this program.

Yours very truly,

HAROLD M. CAMP,

Secretary Illinois State Medical Society.

The following resolutions were passed by The Illinois State Medical Society, May, 1925:

WHEREAS, The Federal Government originally taxed the physicians under the Harrison Narcotic Law for the sole purpose of acquiring a jurisdiction not otherwise obtainable over the prescribing, administering, and dispensing of narcotics within the several states, which jurisdiction was deemed necessary to enable the

Government to carry out certain international obligations it had assumed;

WHEREAS, For revenue purposes alone, the tax then imposed, \$1.00 a year, was increased to \$3.00 a year by the Revenue Act of 1918, by which Act new taxes were established and other existing taxes generally were increased as a part of a consistent plan for raising money for the expenses of the World War;

WHEREAS, The expenses of the World War have now been so cared for that tax reduction has been and still is necessary to the carrying out of a sound financial policy, and the taxes generally that were established increased by the Revenue Act of 1918 to meet such expenses were abolished or reduced by the Revenue Act of 1924; and

WHEREAS, The war tax imposed on the medical profession by the Revenue Act of 1918, through an amendment to the Harrison Narcotic Law, has not been abolished, and no explanation has been offered, and none found, for the continuation of such a tax; be it *Resolved*, That the Illinois State Medical Society protest against the continuance of this war tax as an unwarrantable and unjust discrimination against the physicians of the State of Illinois and of the United States and urges its discontinuance; be it further *Resolved*, That the Illinois State Medical Society protest against the imposition of any tax under the Harrison Narcotic Law in excess of what is necessary for purely jurisdictional purposes, not exceeding \$1.00 a year; be it further *Resolved*, That copies of this resolution be sent to the President of the United States, the Secretary of the Treasury, the Committee on Finance of the United States Senate, to the Committee on Ways and Means of the United States House of Representatives and to every senator and representative of the State of Illinois in Congress; and be it further *Resolved*, That the proper officers of the American Medical Association and of the Illinois State Medical Society and every constituent county medical society of the Illinois State Medical Society be requested to take whatever measures may be necessary to effect purposes of this resolution.

WHEREAS, The Commissioner of Internal Revenue construes the Revenue Act of 1924 as denying to physicians the right to deduct in the computation of their federal income taxes traveling expenses incurred in attending meetings of medical organizations and the expenses of post-graduate study;

WHEREAS, The essential knowledge and skill of the physician cannot be acquired solely from books and periodicals, and the experience of the profession has shown that attendance at medical meetings and post-graduate study are necessary and ordinary parts of the physician's professional activities without which he cannot keep his knowledge and skill abreast of the times and bring into his community the knowledge and skill current elsewhere;

WHEREAS, Any failure on the part of the physician to keep abreast of the times is a detriment not so much to himself as to the community that he serves; and

WHEREAS, Manufacturers and merchants are allowed

to deduct as expenses of their businesses traveling and other expenses incurred in keeping their plants and equipments up to date; be it *Resolved*, That it is the opinion of the Illinois State Medical Society that the Revenue Act of 1924, as interpreted by the Commissioner of Internal Revenue, is, in so far as it results in the taxing of physicians on maintaining their knowledge and skill, contrary to public policy; be it further *Resolved*, That to tax physicians on the cost of keeping their knowledge and skill up to date, while not taxing manufacturers and merchants on the cost of keeping their equipments and stocks up to date, is an unwarrantable and unjust discrimination against the medical profession; be it further *Resolved*, That in the opinion of the Illinois State Medical Society the Revenue Act of 1924 should be amended so as to encourage, rather than to discourage, the efforts of the medical profession to fit itself to render the utmost possible good to the community and so as to do away with the present unwarrantable and unjust discrimination against the profession in the matter of taxation; be it further *Resolved*, That copies of this resolution be sent to the President of the United States, the Secretary of the Treasury, the Committee on Finance of the United States Senate, the Committee on Ways and Means of the United States House of Representatives, and every senator and representative of the State of Illinois in Congress; and be it further *Resolved*, That the proper officers of the American Medical Association and of the Illinois State Medical Society and every constituent county medical society of the Illinois State Medical Society be requested to take whatever measures may be necessary to effect the purposes of this resolution.

TUBERCULIN STANDARDIZED BY NEW METHOD

The Chicago Tuberculosis Institute takes pleasure in announcing the discovery of a new way of standardizing tuberculin. This was reported at the recent meeting of the National Tuberculosis Association in Minneapolis as the work of Dr. Esmond R. Long of the Department of Pathology, University of Chicago.

Tuberculin is used in discovering tuberculosis in cattle and in treating the disease in man. No chemical method of measuring units of tuberculin is at present possible, says Dr. Long, although promising work in this direction is under way. But he has found that it can be gauged by its effect on certain cells of laboratory animals, such as guinea pigs. The results are to be observed under the microscope.

The discovery will be of great service in connection with both bovine and human tuberculosis. The work has been carried on by Dr. Long at the University of Chicago with the aid of a grant from the National Tuberculosis Association, and is part of a series of correlated researches conducted through the Association on the nature of the active products of the bacillus of tuberculosis.

Though a young man, Dr. Long is well known as a tuberculosis specialist; he is a member of the board of directors of the Chicago Tuberculosis Institute.

Original Articles

CHRONIC ARTHRITIS*

LEONARD W. ELY, M. D.

Professor of Surgery,* Stanford University, School of Medicine.
SAN FRANCISCO, CAL.

If the watch in your pocket stops, you do not attempt to start it up by developing abstruse theories as to the cause of the stoppage, but you take it to a man who knows all about its insides and let him fix it.

If your motor car balks, you do not sit down by the side of the road, speculate on atmospheric conditions, the possible influence of the brands of gasoline you have been feeding it. You do not even try to start it up by putting paint on the outside or rubbing a little something on the tires. If you know anything about the machinery of your car you can probably remedy the trouble, if not, your only hope is to get someone who does know.

If your patient have a cough or a pain in his belly you try to make up your mind, from the knowledge you possess of his internal organs, what is going on inside, and you call upon your clinical knowledge and the resources of the laboratory to find out the cause of his complaint.

If your patient have an inflammation of a joint you abandon all the rules that guide you in the treatment of inflammations in other organs. You paint it with iodine, you rub things into the skin or wrap it up in bad smelling preparations. You apply heat or cold to it or electricity or x-rays or various forms of physical therapy. You resort to coal tar products and still the pain. When all these fail you take refuge in high-sounding terms, and speak mystifyingly of the *locus minoris resistentiae*, of dyscrasias, the rheumatic diathesis and disturbed metabolism. One thing you will not do—study the pathology of joint inflammations, in order to learn how to treat them intelligently. There are few short cuts in medicine. Personal opinion is of little importance. There is only one reliable way to solve a difficult problem, and that is by patient investigation, accumulation of facts, and correct reasoning from the evidence. If our reasoning be not sound, our conclusions will be false, but the facts we accumulate will stand, and may enable those who come after to attain the truth.

When we come to examine joints in the laboratory, and compare our findings with our histories and clinical data, we find that all cases of chronic arthritis fall into three classes. The first of these is *Traumatic Arthritis*.

It is customary to speak very loosely of traumatic arthritis. We often speak of a trauma to a joint without any very distinct idea of what we mean. A joint may be traumatized in several different ways. Its capsule may be torn. This is a sprain. When the capsule is healed, and the effusion has disappeared the joint is well. Sprains are never the cause of a chronic arthritis. They cannot be. If an intrarticular fibrocartilage is torn, the joint will be frequently sprained, but when the causal lesion is repaired, the joint recovers. No train of pathological processes can be set in motion by a lesion of this sort.

A second form of traumatic arthritis is caused by intraarticular fracture. When union takes place with the fragments in faulty position, the joint is to be viewed as a damaged machine. When it is used thereafter, it is constantly sprained, and we have a true chronic traumatic arthritis.

A third form of traumatic arthritis is that caused by foreign bodies, and under this heading probably falls gout.

Leaving aside the traumatic arthritides, all cases of chronic arthritis fall into two great groups or types, which usually can be distinguished in the clinic, almost always by the x-rays, and invariably in the laboratory. They have been named, classified, divided and subdivided by various authorities in a bewildering way, but until we are perfectly sure of our ground, I think clarity will be attained if we simply fasten on them some non-descriptive title, and so I call them Type 1 and Type 2.

Type 1. This class includes all cases of frankly infectious origin. Their prime pathological characteristic is a proliferative inflammation in the synovial membrane, in the bone marrow in the vicinity of the joint, or in both. The synovial membrane becomes thickened and villous, and eventually may become little else than a mass of scar tissue. It encroaches upon the joint cartilage and spreads out over its surface. The marrow inflammation causes a rarefaction of the bone tissue, or even its death. The granulation tissue interferes with the nutrition of the car-

*Read before the Inter-State Post Graduate Assembly of America, Milwaukee, Wis., Oct. 27-31, 1924.

tilage, perforates it, and eventually may kill it, and throw it off into the joint cavity. When the bone end is laid bare in whole or in part, the granulations may unite with those from the other bone and with those from the synovial membrane to bind all three tightly together in a fibrous ankylosis. Occasionally the ankylosis in time becomes a bony one. On the other hand, in the milder cases a return to normal is possible.

Identity of pathology implies identity of symptomatology and of physical signs. The diagnosis among the members of this type is never made positively until the demonstration of the causal organism has been done. Clinically all the cases are much alike. We make a rough working diagnosis by the examination of the patient generally, and from study of his history. Thus, if the patient have well marked evidences of syphilis, we are inclined to start the treatment with antisyphilitic measures, if he has recently had a urethral infection, we regard that as the probable cause. If many joints are involved, we should hesitate to make a diagnosis of tuberculosis, etc., etc. Bear in mind that all this has nothing to do with the joint itself. If the patient were covered with a sheet, and if we viewed the joint through an opening in it, without the privilege of asking questions, we should be completely at sea.

The cause of all these arthritides is probably a bacterial or similar organism, domiciled somewhere else in the body, the so-called focal infection. We know this is the case of some, such as syphilis and tuberculosis, and from the similarity of symptomatology and pathology we surmise it in the others. It must be remembered that not so long ago they were all supposed to be due to some mysterious humor or dyscrasia. The progress made in clearing up most of them leads us to hope that before long we shall understand the rest. In this connection, you will be surprised to know that in a standard system of medicine published about twenty years ago, the cause of gonococcic arthritis appears as a reflex from the irritation to the urethral mucous membrane.

The members of this group all have strong features in common in their symptomatology, but usually differ enough in detail to permit us to make a good working guess as to their identity. Pain, stiffness, muscular spasm, increase in local temperature, deformity are present in varying degree. A lengthy description of each one is

hardly possible here.¹ The x-rays usually show rarefaction of the bone and thinning of the joint cartilage. Bone proliferation at the joint line is absent. By the distribution of the rarefaction and by its extent the radiographer is wont to reach a fairly reliable conclusion as to the nature of the disease, but his conclusion is only to be regarded as tentative, not as final.

The first step in the treatment is to remove the focus of infection, when this is possible. Syphilitic arthritis demands antisyphilitic treatment. The two other great sites of infection, especially in the multiarticular forms, are the tonsils, and, in the male the deep urethra. Often stubborn cases which have resisted all sorts of local treatment will recover after tonsillectomy, or after massage of the prostate, or vesiculotomy.

In tuberculous arthritis, we are never able to remove the original focus in the body. We have no means of identifying it. Therefore we must direct our therapeutic measures to the joint itself. Fortunately these cases are almost always uniarticular. The three main rules for us to follow are: 1. Deprive the joint of function. 2. Avoid secondary infection. 3. Build up the patient's resistance. In adults the treatment is almost always operative, in children rarely. I state these rules briefly, necessarily so, in a paper of this length, but I am prepared to go at length into the reasoning on which they are based. Authorities differ radically on the merits of operative treatment in the spinal tuberculosis of children. Personally I believe in practically invariable operative treatment in patients of all ages, and think that cure is very rarely attained in any other way. The Hibbs operation, when carefully done, gives excellent results.

Handled along these lines the majority of our cases of 1st type arthritis will respond satisfactorily. There remains, however, one form of severe multiarticular progressive inflammation which will defy all our efforts, and will steadily grow worse. I had grown to regard these as hopeless, but recently I have seen one or two improve decidedly following the eradication of intestinal parasites. A search for amoebae in the stools should be carefully made. If found, they should be treated with neoarsphenamin and emetin.

Type 2. This is the arthritis deformans of the Germans, the osteoarthritis of the English, the

1. See Ely, Leonard W.: *Inflammation in Bones and Joints*, J. B. Lippincott Co., 1923.

hypertrophic arthritis of Goldthwait, the degenerative arthritis of Nichols and Richardson, the chronic rheumatism of the elderly, senile arthritis. When occurring in the terminal inter-phalangeal joints it is known as Heberden's nodes, and is often mistaken for gout. It is of very frequent occurrence, widely distributed, and of ancient origin. It is never seen in patients under twenty years of age, is very rare in the third decade of life, and is distinctly a disease of middle and late life. In some 109 cases tabulated during the last year at the Stanford Clinic, 58 per cent. were in men. This is the 5th series I have tabulated. It corresponds closely to the other four.

Most writers on this disease have ascribed it to one of three main causes, viz.: 1. Trauma. 2. Infection (bacterial). (3. Disturbed metabolism or some mysterious diathesis. No trauma affords any adequate explanation for the remarkable changes we observe in our laboratory specimens, the changes are radically different from those caused by bacteria, and to talk about disturbed metabolism is simply to drug our intelligence with meaningless words. Disturbed metabolism means disease. Shall we say that chronic arthritis is due to disease? I refer to my previous writings for an extended argument on the subject.²

Until two or three years ago the only reliable clue we had to the etiology was that patients almost invariably had infection at the roots of their dead teeth—the so-called root abscesses. Many of them had lost all their teeth. This observation hooked up well with the incidence of the disease in late life. Many of our patients improved when the dead teeth were extracted. I had observed in my laboratory specimens peculiar necrotic areas in the bone in the vicinity of the joint, and had come to regard them as the primary pathological change from which all the other changes followed. The problem, then, became to discover what living organism, not a bacterium, domiciled in the gastrointestinal canal finds access to the circulation through the diseased bone at the roots of dead teeth, and, set down in the bone marrow, causes these necrotic areas. The most likely culprit is the amoeba, and I have been following this clue with excellent

results. Since my last series of published cases we have observed 109 in the Stanford orthopedic clinic; 63 of whom were men, 46 women. In 62 of them alveolar infection was demonstrated; 12 of them were edentulous. In 29 no examination of the teeth was made. In 36 intestinal parasites were found, the amoeba coli 31 times, giardia twice, endolimax nana twice, histolytica twice, entamoeba butchlii twice. Two patients showed double infection. Thirty-three patients were not examined. This gives us a trifle under 50% of infection in patients examined. Each year, with increasing skill in our laboratory, the percentage of positive finds has increased. All the examinations have been done at the Stanford laboratory under the direction of Dr. Harry Wyckoff, to whose courtesy we are greatly indebted.

Our theory so far rests on purely circumstantial evidence, backed up by the results of our treatment. The claim of Kofoed that he found amoeba histolytica in the marrow of one of my patients has never been confirmed. I incline to the belief that one of the so-called harmless amoebae will prove to be the usual cause, possibly the amoeba buccalis. An organism might be harmless in the mouth, and very noxious in the bone marrow.

Into the details of the pathology I cannot go here. As said above, the prime pathological change is probably the aseptic necrosis in the region of the joints. All the bone and joint changes result from this. The disease is recognized clinically and grossly in the laboratory by the bony and cartilaginous outgrowths in the region of the attachment of the capsule. The cartilage wears away over the bone end. The joint becomes permanently mechanically damaged. It is a poor machine, and becomes easily sprained. Hence the prevailing idea that the disease is caused by trauma. The cart has been put before the horse. It is the disease which causes the joint to be sprained not the sprain which causes the disease. Union of the articulating bones rarely results except in the spine. Here bone is sometimes poured out like syrup from a jug and often welds the vertebral bodies solidly together. Parenthetically it may be said that the changes in the spinal joints are responsible for many cases of what is erroneously diagnosed as neuritis, radiculitis, sciatica, lumbago, muscular rheumatism and fibrositis. The next case you see of obscure pains running down the extremities, send to the radiographer. You will probably

2. Fly, Leonard W., The Great Second Type of chronic arthritis, Arch. of Surgery, 1920, I, 158. Further studies, Cal. State J. med., 1921 XIX 415. Third study, Cal. State J. of med., 1922, xx, 329. Fourth study, J. A. M. A., 1923, lxxxii, 1763. The amoeba as the cause of the great second type of arthritis, Cal. state J. med., 1922, xx, 59. Inflammation in bones and joints, J. B. Lippincott Co., Phila., 1922.

see little hooks or spurs on the joint margins of the corresponding region of the spine.

The treatment can be deduced from what has been said. The first step is the investigation of the teeth. Any dead, or plainly abscessed teeth should be extracted, any old snags should be dug out. I have seen cases improve after this alone. The next step is the search for parasites in the stools. This can only be done by an expert parasitologist. A routine examination by an intern is worthless. If parasites be found they should be eradicated if possible. We depend upon a thorough course of emetin and neoarsphenamin. At the Stanford orthopedic clinic we have set one day of the week for the administration of neoarsphenamin. Alcresta ipecac we have discarded, though it is employed by some. When no parasites are found in the stools we give the emetin without the neoarsphenamin. The results of the treatment are good. Some patients show a clinical recovery, though of course we recognize that the damage to the joints is permanent, and no complete restoration to normal is possible.

A few of our patients have failed to improve under this treatment, but have responded readily to the injection of a foreign protein. I offer this clinical observation for what it is worth. I know of no logical reason for it, but we are always ready to try anything that promises results.

Those of you who have treated these cases know well that many of the patients are influenced markedly by their diet. Anything that upsets the digestion aggravates their disease. This agrees with our hypothesis as to the cause of the disease, but does not lead to the conclusion that the disease is caused by diet. The patient should eat the food that agrees with him best. The changes have been rung *ad infinitum* on the dietary treatment of "chronic rheumatism."

The application of heat in any form almost always is agreeable to patients with this form of arthritis. Dampness and cold usually make the symptoms worse, but neither of them is to be regarded as a cause of the disease. We have an almost ideal climate in California, but this form of arthritis is very common with us. Parenthetically I may record a personal observation that in California alveolar infection is of frequent occurrence, and occurs very early in life. A few years ago I sawed up a hundred bones taken at random from the collection of the ana-

tomical department of Stanford University, and was astounded at the proportion which showed the bony ridges at the articular margins.

My study of my specimens in this disease has explained to my own satisfaction two things that have always been a puzzle to me. Whether or not the explanation is a good one, I leave you to judge. The first of these is fracture of the neck of the femur in the elderly and its failure to unite. I believe that it is due to the areas of necrosis in the femur neck.

The second thing is the peculiar stiffness and active arthritis which so often follow an intra-articular fracture in an elderly person. I believe that the fracture has opened up one of these necrotic areas in the bone, and has set free the infectious material, whatever it may be, in the joint. The next time you have one of these cases, do not reproach yourself for leaving the splint on too long, or not long enough, but investigate the patient's teeth, and examine his stools. While not exactly germane to my subject, let me suggest the same procedure in your patients with Dupuytren's contracture. I have yet to see a well marked case without alveolar infection.

Conclusion: All cases of chronic arthritis, except the strictly traumatic, can be divided into two main groups or types. The first are the frankly infectious. They include tuberculosis, syphilis, and the arthritis caused by an infection in the tonsil and in the deep urethra, pneumococcic arthritis, etc. To the second type, abscess at the roots of the teeth stands in some sort of causal relation, probably as forming a port of entry to the bone for the causal organism. Suspicion points to some form of animal parasite as the cause, probably a protozoan. The two types are quite distinct and are to be handled on entirely different lines. The treatment of both types is usually satisfactory, though some cases will defy all our efforts.

UNITED STATES HOLD THE RECORD FOR THE NUMBER OF MURDERS COMMITTED

The United States has an annual murder record for each 100,000 of population, twenty-five times greater than that of Great Britain, and three times larger than that of Italy.

ARGUMENT FOR INDUSTRY

Old Hen: "I'll give you a piece of good advice."

Young Hen: "What is it?"

Old Hen: "An egg a day keeps the butcher away!"—Progressive Grocer.

PRINCIPLES IN PLASTIC SURGERY ABOUT THE HEAD AND NECK*

JOSEPH C. BECK, M. D.

CHICAGO

I do not intend to present the entire subject of plastic surgery about the head and neck, but rather the principles of the cosmetic plastic surgery that most of you are interested in and are doing these days. That is the reason why I want to bring out some of the points that I have learned by experience rather than by reading.

The first thing I want to bring to your attention is the lack of principle of doing plastic surgery such as is being done all over the world and particularly in this country, namely, cosmetic plastic surgery. The fact is, the operation is not indicated but is in the minds of people, rather a mental disease but which is nevertheless very strong and prevalent in many individuals. I feel that many of these operations we are asked to perform, while very lucrative, are unnecessary and are frequently followed by disastrous results from a surgical standpoint as well as from a medico-legal. I have had some very sad experiences in this work in some cases, though none of them ever brought me into court, but experiences that I am sure none of you would cherish. That is my reason for coming before you to see if I can help you to avoid getting into the same difficulties. The unprincipled individual, the quack, who advertises, attracts the intelligent public who are desirous of having this work done. Since the late war a number of men have gone into a specialty known as head surgery with special attention to plastics. I have come across many cases in which their patients' faces have been ruined and their minds were certainly much worse than before they were operated on. These are not out-and-out-quacks, but are regular physicians, although not recognized by the best medical societies.

When a patient comes to you and says, "Doctor, I do not like the shape of my nose; I would like to have it made different; I do not like the hump," etc., the first problem then is to decide whether you want to accept that case for operation. I daresay there are definite indications for that operation just the same as protruding teeth should be corrected and you as an able sur-

geon, knowing the technic of the cosmetic plastic operation should be willing to do that. For instance, take an individual who is handicapped because of his appearance. It may be nothing else but a humped nose but it preys on his mind and when it is corrected it makes him happy. There are other certain indications for such operation but in the majority of cases it is not indicated. It is the mental state that develops that causes the patient's distress. I have discovered a practical means of persuading some individuals not to have these unnecessary operations done. Many people do not know how they look even from looking in the mirror or a flat photograph.



Plate I.

One way is to have a wax cast made, then change the nose on this cast and show them how it will look after correction. The other way is to have made the wax model of the nose and then you have them point out the parts they would like changed and many times when you show them how the nose will look after correction, they change their minds about having it performed. A plaster cast of the whole face will

*Read before the Section on Eye, Ear, Nose and Throat of the Illinois State Medical Society, Springfield, May 6, 1924.

frequently bring this sort of an expression from the patient. "I never knew that my nose looked so well as this" and they will desist from wanting the work done. Talking them out of an operation is practically impossible.

The real principle in this cosmetic surgery is a knowledge of the anatomy of these structures and knowing what they will stand. You understand that all this work is preferably done from the inside of the nose. The removal of a hump or the deviation of one side of the nose should be done from the inside. A fact to know is that the nasal process of the superior maxilla that meets the nasal bones at the top is a vital point. If you are too anxious and remove too much of the hump there will be a gap at the junction between the nasal bone and the triangular cartilage. The junction of the cartilage and bone are so important that any disturbance may be followed by a perichondritis with a possible infection from inside the nose.



Plate II. Stereo-Photograph.

For the excision and removal of any hump the best way is to burr off or use the Joseph rasp. Halle presented us with a grooved director for intranasal and frontal sinus operations which is excellent for this purpose. The director is hollow grooved along its sheath and if you put that retractor into the incision and over the hump, so that the burr does not cut the subcutaneous connective tissue lying over it, you can remove as much of the hump as you like but always bearing in mind this little point mentioned above about the junction of the nasal bones with the cartilage. In the removal of humps you must always remember the next point, that often as a result of the operation there will be an increase instead of a decrease in the hump, for sometime there will be an increase either due to a hematoma or reaction. In due time the inflammation

will subside and the hematoma be absorbed and a straight nose will follow.

The question of asepsis is of course very important. If one is going to operate intranasally



Plate III. Before and After Operation.

or rather intravestibularly, that region must be thoroughly disinfected. One must understand that if you implant bone or cartilage into loose tissue without cartilage or bony contact that in due time it will be absorbed. Therefore you must have points of contact.

What material to use for an implant is a mat-



Plate IV. Before and After Operation.

ter of choice with the operator. Until 1914 or 1915 when the reports began to come from the work abroad it was believed that cartilage was

not very favorable as an implant, but since then cartilage has become a great favorite. Cartilage or bone from the rib is most frequently employed. The osteoperiosteum of the tibia or crest of the ilium has been used by us with success. I chisel off a periosteum with only a very thin layer of bone attached, so thin that it will crumble in your hand. That graft can then be fitted in to fill out a defect like a saddle or notch. If cartilage is used it should be preferably rib cartilage of the right side, preferably of the eighth rib. It can be obtained very well under a local anesthetic infiltrating skin as well as perichondrium. The point is that the transplants can be either osteoperiosteal or cartilage, but remember that you must have attachments or contacts to the bone or cartilage. Another thing is, when you take off the rib leave the perichondrium attached to it. However, it is different when you use bone. If you leave a great deal of periosteum attached, you may have what happened to me, in one instance, namely, the transplant grew subsequently so that it was larger than the deformity it was supposed to correct. These grafts should be handled aseptically. It is best to have a team doing this work, so that while one works on the nose, the other can be obtaining the graft. The graft should not be placed in salt solution. When you are ready for implantation of the graft, it should be taken from one place, the rib, and put into another without coming in contact with any foreign substance added to it. It happened to me in one case that the graft dropped on the floor. I sterilized it with tr. of iodine and salt and inserted it and there was no trouble from it, which may have been only luck.

Regarding the general anesthetic in these operations, we use what is known as an synergistic analgesia. It is a rectal or colonic method. The patient is given one-eighth grain of morphin for each 50 pounds of body weight. The average patient receives three (3) doses of morphin half an hour apart. The morphin is injected with magnesium sulphate solution 25 per cent. of which (two cc.) are added to each dose. At the conclusion of the last intramuscular injection of this morphin-magnesium sulphate mixture, the patient receives a rectal or colonic injection of ether in olive oil to which is added a solution of paraldehyde. For each 50 pounds of body weight, the patient receives one ounce of

ether and one ounce of olive oil and one drachm of paraldehyde, so that the average patient receives three ounces of ether and olive oil and two or three drachms of paraldehyde. This is allowed to flow into the rectum very slowly. It should take about 10 minutes for these six ounces of fluid to pass into the bowel.

In discussing the principles of plastic surgery I have confined myself to cosmetic operations, either the removal or adding of parts, particularly saddle or humps. I am not talking about reconstruction where larger parts are missing. This work is so important and these points I have told you about are so definitely established in my mind that I believe we had better study them a little closer. From my correspondence I find there are just as many requests for these operations in the smaller cities as there are in the larger ones.

Since the presentation of this paper, the writer has had a new experience which is so practical and satisfactory that he desires to place same, here on record although not ready to be conclusive.

It is the experience in regards to foreign body implants, namely, ivory. While visiting a colleague, Dr. Maliniak of Cincinnati, Ohio, who was so kind to show the writer a number of patients on whom he had used ivory implants for correction of various nasal deformities with great success. The latter having studied the subject thoroughly under the tutelage of Jac Joseph of Berlin who originally having employed ivory in several hundred instances with equal success.

Having obtained the necessary ivory material (which in chemical composition is nearest to bone) as well as the implements such as vises, files, saws, and etc. The writer has employed these implants in a series of thirty-five cases with uniform success.

His associate, Dr. H. L. Pollock, whose original work on bone and cartilage transplants intraseptally in cases of atrophic rhinitis for the reduction of space, has also employed these ivory implants with encouraging results in seven cases.

The advantage of ivory implants to bone or cartilage are: first, no donor area need to be attacked; second, no chance for absorption; third, the perfect shaping of implant can be carried out more readily with ivory than with bone or cartilage.

DISCUSSION

DR. C. H. LONG, Chicago: I am interested in the work Dr. Beck has spoken of. This work can be done to a limited extent by the inexperienced. I have failed to find a sufficient amount of literature on this subject that will be of assistance to the man who has not done very much of this special work.



Plate V.



Plate VI.



Plate VII.



Plate VIII.

Dr. Beck's discussion on little points connected with this subject gives me much pleasure.

DR. J. SHELDON CLARK, Freeport, Ill.: I have had the pleasure of seeing Dr. Beck do some of this work. I realize that he is a past master in this line of work. As the Doctor mentioned, it can be made something of a graft. It can be urged by those of us who can do the work because people are so anxious to have their cosmetic appearance changed.

I would speak of the deformities that sometimes have to be operated on in a plastic way that are caused through injuries of the nose and which could have been reduced at the time of injury and the nose molded into normal position. In these cases much can be done by lifting the nasal bones that may have been depressed, not necessarily inserting a splint, and the daily molding of the part and the use of pressure apparatus, etc., to the end that you get a cosmetically, functioning nose. The general practitioner sees these cases first. If he is not able to handle them he should refer them to a man who can do the work and in that way a great improvement in results will follow.

DR. C. B. WELTON, Peoria: I do not do this work myself but I have seen a great deal of it. I have seen Dr. Beck's work but most of the work I have seen has been done by the general surgeons in my town. These surgeons have walked me from one end of the hospital to the other to show me their cases. They will take these transplants of bone or cartilage and put them in the nose and there will be a bulge above or below and the angle would not be right. They will ask me if I like the job. I was perfectly frank with some and said I did not think much of it. In fact, I have not thought much of these cases done by the general surgeon.

I would like to ask Dr. Beck what percentage of his patients are perfectly pleased with the operation and in what percentage of the cases is he pleased.

DR. N. SCHOOLMAN, Chicago: In using the rectal anesthesia I would like to ask Dr. Beck if he does not inject anything into the skin of the nose and whether hemorrhage during the operation is not troublesome. I have seen this work done under local anesthesia.

I would like to ask Dr. Beck what he thinks about the value of ivory. Joseph is using ivory. He boils the piece of ivory before using it.

DR. JOSEPH BECK, Chicago (closing discussion): Celluloid was used by an American, New of Rochester. I have learned to leave out all foreign bodies because they are irritants. My teacher in plastic surgery was Nicholas Senn and he used to practice these things. I have only used the individual's own tissues as transplants. If I do not use it from the same individual I secure one from a patient in the same group as one does in transfusion of blood. When in the same group the tissue is just as good as the individual's own. Fat is good but it is very easily infected. Paraffin you want to keep away from. I have seen many that have been injected. I think the bad results are due to two things, one is the patient's own susceptibility to paraffinoma and the

other is putting too much tension on the skin, or injecting it into the skin.

As to local anesthesia, you not only can use local anesthesia but it is preferable. If you wish you can use ether by the colonic or synergistic method, which we prefer to any other general anesthesia.

As to hemorrhage occurring during operation, we do not have any trouble from that.

I had in mind to talk about the type and size of transplants. They should always be a little smaller than the size that you think necessary. That has been the great trouble with most men; the implants have been too large. You will be surprised how little it takes to correct a defect. You can put cartilage in the nose and trim it to the size desired. Cartilage is very easily trimmed compared to bone.

Dr. Clark brought up a very good point regarding acute fracture of the nose and the immediate reposition. We were taught in former days in fractures, to wait until the reaction subsided. Whether compound or simple immediate adoption and splinting is best. After you remove the blood clot and foreign particles outside or within the nose, then replace the fragments and insert the packing. I have found nothing better than the Bernay splint. They hold very well within the nose and adhesive plaster correctly applied over the bridge of the nose.

This man Joseph of Berlin whom Dr. Schoolman alluded to is worth mentioning. He is probably the greatest man in plastic surgery. I have never seen him but I understand he is too secretive.

Doing a septum correction for hump is often overlooked by rhinologists. Many times you can do resection followed by something like an Asch operation and you will find in a week or two that the nose is quite straight. I would advise you to operate on the protruding septum cases in two stages, doing the external operation first. In that way you will have a much better cosmetic result and no chance of a perforation.

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A MEDICAL LIEN*

EDMUND D. LEVISOHN, M.D.

CHICAGO, ILL.

The purposes of this paper is to bring before you the advantages which would accrue from legislation which would protect the pecuniary interest of physicians, surgeons and hospitals when called upon to render service in *Emergency Cases*.

I am sure you have all had the experience of being called upon to render service in accident cases. It is general knowledge among the profession that there is great doubt that compensation for services rendered under these conditions will be paid. Frequently your services are slight—in others weeks or months of attention may be necessary. The emergency feature of these cases is such that in the majority of instances the injured person is totally unprepared to meet the unexpected expense of medical and hospital care, and, consequently, he is compelled honestly to state that he will be unable to meet his obligation until such time as an adjudication is made of his claim for damages. This usually occurs months to years later, by which time the case has probably slipped your mind. So that in spite of the patients' sincere gratitude and well-meant promises, we know that a large percentage of them either forget or neglect to pay their bills.

Therefore, the object of this paper is to establish a Lien upon all funds recovered as a direct result of an accident. The legislative action which this paper advocates is one which will protect the interests of physicians, surgeons and hospitals by establishing a Lien (by the service of a written notice), upon the damages which may be recovered either by settlement or at law.

In drafting a Lien of this character, we could very properly pattern it along lines similar to those at present in force by the legal profession, which 16 years ago recognized the virtue of such a measure and had it enacted in 1909, since which time it has been effective.

Liens of this nature are not limited to the legal profession. At the present time lawyers, mechanics, laborers, storage houses, horseshoers, blacksmiths, hotels, etc., have successfully intro-

duced bills for their protection into our State Legislature.

Very little change will be necessary to make the Attorneys' Lien Law fit the needs of the Medical Profession. I am going to read the statute covering the attorneys' lien; and then a draft of a Medical Lien, which would cover our needs:

AN ACT CREATING ATTORNEYS' LIEN AND FOR ENFORCEMENT OF SAME FILED JUNE 16, 1909. ANN. STAT. VOLUME 1, P. 626.

ATTORNEYS LIEN FOR FEES—ENFORCEMENT

Be it enacted by the People of the State of Illinois, represented in the General Assembly:

That attorneys at law shall have a lien upon all claims, demands and causes of action, including all claims for unliquidated damages which may be placed in their hands by their clients for suit or collection, or upon which suit or collection has been instituted, for the amount of any fee which may have been agreed upon by and between such attorneys and their clients, or, in the absence of such agreement, for a reasonable fee, for the services of such attorneys rendered or to be rendered for their clients on account of such suits, claims, demands, or causes of action.

Provided, however, such attorneys shall serve notice in writing upon the party against whom their clients may have such suits, claims or causes of action, claiming such lien, stating therein the interest they have in such suits, claims, demands or causes of action, and such lien shall attach to any verdict, judgment, or decree entered and to any money or property which may be recovered, on account of such suits, claims, demands or causes of action, from and after the time of service of the aforesaid notice.

On petition filed by such attorneys or their clients any court of competent jurisdiction shall, on not less than five days notice to the adverse party, adjudicate the rights of the parties and enforce such lien in term, time or vacation.

PHYSICIANS', SURGEONS' AND HOSPITALS' LIEN FOR FEES—ENFORCEMENT

Be it enacted by the People of the State of Illinois, represented in the General Assembly:

That any person duly qualified and licensed to practice medicine and surgery, and any duly licensed hospital in this state shall have a lien upon all suits, claims, demands and causes of action, including all claims for unliquidated damages which may accrue, for medical and surgical services rendered to their patients for the amount of any fee which may have been agreed upon by and between such physician and surgeon or hospital and their patients, or, in the absence of such agreement, for a reasonable fee for the services of such physicians, surgeon or hospital,

*Read before North Side Branch, Chicago Medical Society, May 7, 1925.

which are in part or in the whole the foundation of such suits, claims, demands or causes of action.

Provided, however, that such physician, surgeon or hospital shall serve notice in writing upon the party against whom their patient may have such suits, claims, demands or causes of action, stating therein the interest they have in such suits, claims, demands or causes of action, and such lien shall attach to any verdict, judgment or decree entered, and to any money or property which may be recovered on account of such suits, claims, demands or causes of action from and after the time of service of the aforesaid notice.

On petition filed by such physician, or surgeon, or hospital, or their patient, any court of competent jurisdiction shall, on not less than five days notice to the adverse party, adjudicate the rights of the parties and enforce such lien in term time or vacation.

I am given to understand that there is a department maintained at Springfield for the purpose of drafting bills of this character, and to which the legislators submit their bills before introducing them into the legislature. If possible, it would be well to have the bill so worded that it would cover the following classes of claims for reimbursement:

First: Claims for damages against the person, firm or corporation responsible for such accident.

Second: Reimbursements from fraternal, accident or health insurance.

Perhaps some of you can suggest additional claims which might be included.

I believe that the lien which I have read would give the medical profession or hospital the protection to which it is justly entitled.

I have taken the liberty of asking your Chairman to take your vote on this matter, after the discussion, and if the majority is in favor of this action, the approval of this Society will be made a matter of record.

In closing, permit me to say that if this Bill meets with the approval of a sufficiently large number of our profession, it will be drawn into its final form at Springfield, and will be introduced at the State Legislature. Of this you will receive due notice through the *Chicago Medical Bulletin*, and the *ILLINOIS MEDICAL JOURNAL*. Every doctor will be asked to lend his whole-hearted support to this measure by communicating either by letter, telegram or telephone with the Representative of his district.

115 W. North Avenue.

RESOLUTIONS

WHEREAS, the medical profession and hospitals are frequently called upon to render emergency aid in injury cases, better known as public liability cases, and

WHEREAS, in a majority of these cases the medical profession and hospitals lose their justly earned fees. Therefore

Be it Resolved, that a committee be appointed to present to the State Legislature a bill designed to cover such conditions, thus enabling the medical profession and hospitals to collect their just dues by virtue of a lien similar to that of other professions.

Recommended by the Resolution committee at Quincy, Ill., May 20, 1925.

HISTORY TAKING OF CHRONIC GASTRO-INTESTINAL DISEASE*

WILLIAM GOLDIE, M.B.,

Associate Professor of Medicine, University of Toronto.

TORONTO, ONT.

The securing of a history of the development and course of the disturbances of function in an individual, and the analysing of this information, requires on the part of the physician, the utmost patience, concentration, and skill in cross examination. Granting the skill and persistence, the result in accuracy of conclusion is in proportion to the powers of observation used during the process, and to the breadth of knowledge and conception of human nature, bodily development and structure, functional activities, origin of disease, and the immediate causation of symptoms.

The information obtained must be immediately recorded as a written or dictated statement such as would be sent to a fellow practitioner, for the original notes seldom contain all the essential points revealed. If this be doubted, look upon old records and compare the history notes with the descriptive letter, or where there is no such letter, see if the diagnosis can be justified without calling upon memory to supply essential points.

Is it any wonder that the laborious and time consuming effort is so often shirked; that trust is placed in pathognomonic signs and dictums; that undue emphasis is given to "films"

*Read before the Interstate Post Graduate Assembly of America, Milwaukee, Wis., Oct. 27-31, 1924.

and that too frequently resort is had to exploratory operation.

The effort however, must be undertaken if progress is to be made by the clinician and justice done to the patient. Especially is this required in dealing with diseases of the gastro-intestinal system, for here over eighty per cent of the points of evidence upon which a diagnosis is based arise directly from the history; fifteen per cent from physical examination, and less than five per cent from laboratory findings.

The clinician for long years was handicapped by the meagreness of knowledge of the gastro-intestinal system and was diverted by the investigations of the secretions from the consideration of those factors which are the more immediate cause of symptoms.

But of late years the surgeon, radiologist, bacteriologist and physiologist have provided us with an abundance of facts and observations, which, illuminated by the old and new observations in the allied sciences, such as biology and embryology, have given rise to new conceptions of the functional activities and correlations of the tract. So well do these conceptions harmonize with clinical observation and experience, that we can more confidently search for evidence in the historical details, and arrive at conclusions which a few years ago would have seemed impossible.

Of these conceptions probably the most important are those built up with regard to the musculature. Just as the study of heart diseases has resolved itself into a study of the properties, the activities and correlations of the muscle cells and the controlling mechanism, and of the disturbances set up in these by damage, infectious or otherwise, so the study of gastro-intestinal disease has become a study of the smooth muscle cell and all that relates to its development, structure, activities, controls, and disturbances of function.

Embryological studies still leave many important gaps in our knowledge of the evolutionary development of the tract, but there are certain general conceptions held in common by the opposing schools. Whether or not we believe Gaskell's theory is not of material importance, as his theory of the origin of the primitive tube provides as well as any other a working conception applicable in clinical investigation. It was his belief that the vertebrate developed

from a primitive segmented worm-like organism, and that appendages developed in pairs on the ventral surfaces of the segments, of which only those anteriorly and posteriorly have left vestiges in the course of evolution, namely, the branchial arches which go to make up the face, and an anterior and a posterior pouch which, penetrating the yolk sac between the infolding leaves of the central segments, joined to form the gastro-intestinal tract.

With the development of the appendages a corresponding increase of nerve elements was necessary. These remain within the central nervous system but occupy a different position from the motor cells of the skeletal muscles, as can readily be seen when comparing the situation of the nuclei supplying the only skeletal muscles in the face (the extrinsic muscles of the eye) with that of the motor nuclei of the facial muscles.

He held that the muscles of these appendages were different in structure, and being a later development were not so closely linked up with the higher developments of the nervous system. That a difference does exist is seen in the co-ordinate and purposeful action of the facial muscles at birth in contrast to the inco-ordinate action of the skeletal or segmental muscles, and in the great difficulty we have in hiding emotion. The primitive tube being of even later development is farther removed from "higher" or "will" control, though still influenced by the basic senses and emotions. The extra motor nerve cell development required for its supply arises from the same tract as that supplying the face, but these emigrate from the central nervous system to accompany and remain in contact with the tube, and are known as the bulbo-sacral outflow. The motor cells of this outflow multiply so enormously during the development and growth of the tract that the comparatively few connector fibres of the vagi and pelvic nerves can have but a general control over wide divisions of the tube.

Other connections with the central nervous system develop later. In each of the central segments an extra development of motor nerve cells takes a place; these emigrating from the neural cord either gather as the sympathetic ganglia or become widely dispersed as in the case of those accompanying and embedded in the walls of the blood vessels. This emigration

is known as the thoracic-lumbar-outflow. As contact becomes established between the primitive tube and the central segments, invasion of the tube by blood vessels and other segmental tissues takes place. Thus, each portion of the tube becomes more or less intimately related with that segment in which it happened to lie, sharing in the sensory fibres and sympathetic neurons of that particular segment, and this relationship may be to the right or left half of the segment according to the lateral displacement of that portion of the tube.

In this way the stomach becomes related to the 6th, 7th and 8th dorsal segments on the left side, the duodenum to the 9th dorsal segment, the small intestine to the 10th dorsal, the appendix to the 7th or 8th dorsal on the left, the colon to the 11th and 12th dorsal segments mid-line etc.

Secondary developments of the tract arise from the duodenum in the ninth segment, and the out-growths invade and establish contact with other segments. The liver stalk extending to the right invades the tissues of the sixth to eleventh dorsal, and the displaced tissues (the diaphragm) of the fourth and fifth cervical segments.

The gall bladder stalk passes to the right in the tenth dorsal segment but is rapidly isolated by its peritoneal covering.

The pancreatic stalks pass to the left, and crossing the tenth deeply invades the eleventh dorsal segment.

These sensory contacts help to explain the situations of certain distresses associated with disturbances in this or that portion of the tract.

A primary and permanent muscular coat develops from the "Mother" cells which accompany the primitive tube. A secondary and outer coat develop from "Mother" cells entering with the blood vessel invasion does at one stage of evolution completely cover the tract, but in man is represented only by the sphincters (the internal anal sphincter,—the ileo cecal sphincter,—the sphincter of Odi, and possibly fibres embedded in the pylorus).

The part that the various innervations play in the control of the musculature of the tract is only vaguely surmised.

That stimuli travelling the bulbo-sacral route excite activity in the general coat and cause relaxation of the sphincters, and that the op-

posite results occur when stimuli travel the thoracic lumbar outflow is generally true, but there is evidence that stimuli along either may produce contraction of the pylorus, and merely modify the character of the activity and relaxation in the rest of the musculature.

The properties of the muscle cell consist of the power to initiate rhythmic active contraction, to transmit stimuli to the adjacent cells, to develop continuous stationary contraction (tonic or tetanic), and to actively relax.

While these properties are under a certain amount of external control by efferent stimuli along the two opposed routes, yet the principle control of activities and correlations seems to be by modification of these inherent properties by means of local neurons, local stimuli and local reflexes.

Certain general activities of tract may be depended upon to be in constant play unless disturbed or reversed by obstruction, fright, etc. Faint rhythmic peristaltic waves are continuously travelling over the tract from the supposed point of origin in the cardia to the cecum, being modified here and there by the variance in properties and in local controls. Transmission of contraction from any one point of stimulus spreads farther and more readily downwards. Contraction occurs over the content and the tract beyond relaxes before the oncoming food.

In the course of the development of the gastrointestinal tract, the properties of the muscle cells and the character of the correlation by local control, are modified to bring about special action of the musculature. The stomach musculature may be taken as an example. At least two distinct divisions, originally separate pouches, can be recognized, not only by the sharp line of demarkation existing in the mucus membrane, but by the properties of the muscle and the character of the correlation.

The musculature of the cardia can readily initiate rhythmic contraction, can actively relax, has no great power of active contraction, but is able to maintain prolonged general and almost stationary contraction: produces only weak shallow peristaltic waves, and is not easily provoked to prolonged local contractions; while the musculature of the pyloric antrum can be readily provoked to prolonged local contractions, shows deep peristaltic waves, is capable of strong active contraction, and relaxes but slightly. The junction

of these two musculatures is not abrupt as is that of the mucus membranes, merging rather diffusely. Yet it is in this region of an old sphincter that the property of maintaining prolonged local contraction is seen at its best, in the production of hour glass stomach in response to local or distant stimuli.

The stomach is a hollow muscular mechanism which acts as a receiving, preparing and delivering chamber.

In receiving, the cardiac opening must relax, and this it does, gradually during the passages of six to ten boluses. The first bolus requires a force equal to twenty-six c.m. of water to pass the opening, but the force required lessens with each bolus.

The stomach as a whole, relaxes before the oncoming food, but this takes place principally in the cardia, which lengthens and widens to a variable extent, until some unknown stimulus establishes a gradually increasing tonic contraction, which accompanies the sense of being filled and satisfied.

The general contraction of the stomach with the long periodic waves of active contraction and relaxation, and the periodic accentuation of the peristaltic waves are usually parallel, but not necessarily so. In general, the stronger the general tonic contraction, the less visible are the peristaltic waves. In tetany affecting the stomach the general tonic contraction may be so excessive as to narrow the stomach to a mere tube which has a widely open pylorus and no visible peristaltic waves; while a loose atonic stomach may periodically show excessive peristaltic waves. A few minutes after, and at times even before the end of the meal, the mechanism of delivery begins.

Delivery of food through the pylorus to the duodenum necessitates the application of force. The most economical force is gravity, and here it plays a part, for the level of food in the cardia is above the level of the pylorus. To keep this force in action only slight energy need be expended by the longitudinal and oblique fibres in shortening or tucking up the cardia.

A force due to increasing intragastric pressure is established by the tonic contraction of the stomach wall as a whole.

A third force is brought into play through the propulsive action of the peristaltic waves

progressively increasing local intragastric pressure.

None of these forces require to be great, as delivery must depend, not so much upon the force as upon the size and regulation of the outlet. This by analogy should be regulated automatically in relation to the activities of the stomach. Of this relation there is some evidence in that about any given mean caliber of the outlet the only apparent variations are in relation to the peristaltic waves—the pylorus relaxing before and contracting with the wave as it approaches and involves the pyloric musculature, being relaxed about two-thirds of the time during the height of stomach delivery.

The mean caliber of the outlet, however, must be determined either by a special local contraction of the pylorus, or as part of a general tonic contraction of the stomach or pyloric antrum.

The regulation of the mean caliber is as yet undetermined, though it is known that acid and alkali reactions play little or no part. Yet we must believe that delivery is made according to the capability of the tract beyond to handle and pass on the content, and it is to be expected that difficulties in the tract beyond would influence the activities of the stomach to receive, to deliver, or to reject.

As yet the mechanism of these influences has not been discovered, but sufficient observations have been recorded to support the inference as to the reality of these reflexes and to justify the drawing of conclusions from the occurrence and timing of various gastric symptoms.

The above sketch is of course tentative and need not on this occasion be continued. It is given as an example of the means by which interest in the analysis of details may be kept up. Each one must build up a working hypothesis, to be changed to a more tenable form when opposed by fact or clinical experience.

In the development of a history of a case of indigestion it is well to postpone any consideration of symptoms until the course of the disease and the timing of the symptoms has been fully established. This is generally true, for a list of the symptoms of scarlet fever, typhoid fever and syphilis, when merely recorded as terms are much the same, but the general course of the attack, the severity and relations of the symptoms, etc. reveal the distinguishing features.

While this is well recognized it is not always

acted upon. Too frequently the record of a list of symptoms ends with—"A typical case of —."

The inquiry into the course of an "indigestion" should be particularly directed to the determination of:

1. The duration of the attack or attacks.
2. The length of the intervals.
3. Whether the type of the symptoms at the onset are the same as those throughout the attack.
4. Whether the present attack has the same characteristics as the first and all other attacks.
5. Whether the intervals were formerly and now are absolutely free of any abnormal sensations.
6. Whether anything provokes or exaggerates an attack.
7. Whether any change in the routine, in the functional activities, etc. eases or cuts short an attack.

Close cross examination on these points frequently yields sufficient evidence for a provisional diagnosis which further investigations confirm.

Some general statements can be made about the information obtained from such cross examination:

1. An indigestion which begins about mid-life, or an indigestion in which the character of the attacks has changed must be considered as due to a malignant growth until you can prove there is no malignancy.
2. A continued indigestion characterized by an absolute freedom in the interval, close inquiry must be due to a lesion lying outside the main upper tract. It is important however, to check such a history of irregularity by inquiry as to whether the irregularity is due to changes in routine or the taking of palliatives.
3. An indigestion with regularity of duration of attack and interval, but with onset symptoms of a character different from those of the main course of each attack or most of the attacks indicates that the lesion lies without the main upper tract.
4. An indigestion characterized by regularity in the duration of the attack and interval, and with absolute freedom from discomfort in the interval, indicates a local lesion in the main upper tract. If there is not absolute freedom in the interval, close inquiry must be made as to the timing of the discomfort or unease that is felt in the interval.
5. The occurrence of changes in the attacks other than variation in the severity of symptoms indicates that a new factor is acting: Such a factor might be a narrowing of the lumen, extension of the damage through the wall to the peritoneum and adjacent structures, or the onset of malignancy.
6. The indigestion that begins with worry and anxiety emotions and ceases immediately the cause is removed, has no organic basis, but if continued after

the removal of the cause, there is a secondary and probably minor cause acting reflexly, such as functional colonic stasis.

7. Indigestion that is eased by soda bicarbonate without consequent belching is due to a local lesion or local spasm in the stomach or duodenum. If relief is only obtained by consequent belching, there is either no local lesion in the stomach, or partial obstruction has been added to the local lesion.

8. Indigestion in relation to one special article of diet is probably anaphylactic in origin.

The inquiry then turns to the daily cycle for the accurate determination of the time of occurrence of the symptoms. For this purpose the day is divided into six periods: The period between rising and breakfast; the periods of the meal times up to the next meal, in which care should be taken to differentiate the characteristics of the early and late distresses; the period of retiring, and the period of the night.

The period between rising and breakfast is clear of all abdominal distress in uncomplicated "ulcer" and chronic gall bladder disease. If abdominal distresses do occur, "anxiety indigestion," ileal regurgitation during the night, peritoneal or posterior abdominal wall involvement, carcinoma of the stomach, chronic gastritis, etc., may be the cause.

The time of the distress after the meal directs attention to those parts of the tract which are in the height of activity at that time. To determine which of the active parts is in a state of irritability, the character and position of the distress, the reflex segmental symptoms, the general course, etc., must all be taken into consideration.

The cycle of the next two meals must be worked out in the endeavor to find out if the gastric cycle is disturbed by defects in handling the content or by the presence of a point of irritability in the more or less distant divisions of the tract. The individual symptoms must be carefully inquired into and no reliance placed on hackneyed terms. Full descriptive phrases must be used so as not to confuse "distaste for food," "dread of consequences," etc., with "lack of desire for food," etc.

Many of the symptoms are so often associated with a special muscular action in some part of the tract as to suggest the relation of cause and effect. But I shall confine myself to a short statement of the origin of "abdominal pain" as distinguished from pain arising from skeletal or segmental tissues.

Pain in the abdomen arises in

1. Muscle—by excessive muscular contraction or the stretching of contracted muscle. The pain is not constant, "crampy" or "colicky" when brought on by peristaltic waves, more prolonged when due to a general contraction or to the stretching of contracted muscle as in the so-called "distention pain." It usually occurs or is exaggerated when the part affected is at the height of its usual muscular activity.

2. Peritoneum—when inflamed; the pain being constant.

3. Inflammatory infiltrations, as in the case of lymphangitis and perilymphangitis extending from "ulcer" or carcinoma. The pain arises when the tissue is stretched or pressed upon, and its acuteness is instantly relieved by certain changes in posture.

4. Solid organs, when inflamed and distended. This pain is of course constant, and the patient when indicating its position usually uses both hands and speaks of it as being "in there" or "through there."

The final development of the history is for the purpose of revealing predisposing and direct causes, remote or recent.

As a teacher I find it a difficult task to impress students with the significance of the inquiry into family and past history. Patience becomes exhausted when record after record appears with—"Father, alive and well"; "Mother dead of pneumonia, aged sixty"; "Patient had scarlet fever at seven years, chickenpox at nine years," without any qualifications. We are not interested in whether the parents are alive or not. What is of interest is whether they could have transmitted any fault or infection. It is not the self-limited diseases of the patient, but the recoveries from these that are of importance.

Rarely do the records mention the prolonged ailments of infancy that may stunt the development of special tissues or the whole body, or the minor ailments that indicate the presence of those prolonged and recurring low grade infections, whose localizations may cause special damage and which may recur later in life.

In reviewing my records I find several points arising out of the histories of certain groups of cases of indigestion which may be of interest.

In duodenal ulcer cases with symptoms there is usually a clear and definite history. The attacks are clear cut, of weeks or months duration, only rendered irregular by changes in routine or by the use of palliatives. The onset symptoms in any attack are those that continue throughout the attack. The intervals between the early attacks are free of symptoms until the peritoneum becomes involved by the inflammatory process and adhesions. The timing of the symptoms is after

the height of stomach delivery, be that one hour or four hours after the meal, and occurs after the same meal every day. With this course and timing, less emphasis need be placed on the individual symptoms in making the diagnosis. In the early attacks there may be only one symptom, such a "heartburn," "goneness and sinking," "epigastric tenderness," and such attacks may recur for years before the more definite symptoms of duodenal spasm occurs.

A search for remote causes in the past histories of cases of ulcer of the stomach and duodenum has for me been barren of results, and while agreeing with those who believe that ulcer is due to infection, I have not been able to secure evidence in the past history of pre-existing low grade infections in a sufficient number of cases to justify any conclusions, though the family history is often suggestive. The outstanding feature of the histories is the extreme variableness of the symptomatology of gastric ulcer in contrast to that of duodenal ulcer. This variability I look upon as due to the varying properties of the musculature in the different parts of the stomach, and the peculiarities of correlation. Ulcer may exist in the cardia for long periods of time without or with slight symptoms. It may first attract attention through hemorrhage or involvement of the peritoneum or the stretch of inflammatory infiltration in the gastric hepatic omentum. If lying close to the cardiac opening we may expect some difficulty in the process of swallowing or relaxation of the cardia, with regurgitations or supersensitiveness, and the occurrence of heartburn. At the junction of the cardia and the pyloric antrum local contractions may become extreme without severe distress until obstruction develops. The usual description of the symptomatology of gastric ulcer applies to ulcer as it occurs in the pyloric antrum, and it may apply to ulcer in the lower cardia.

The most common organic cause of indigestion is chronic gall bladder disease, constituting approximately 45% of all the organic causes.

Uncomplicated cases have no distress on awakening in the morning, the discomforts coming soon after the meals when the biliary symptom is active, but they vary as to recurrence from day to day and from meal to meal. The amount of food taken seems to have more influence than the kind of food, in bringing on the attacks

through increasing the work of the biliary system. An increasing desire for food, even to ravenous hunger, often precedes the worst attacks, and is most frequently noted in those cases of single stone embedded in the pouch at the neck of the gall bladder.

The course of the indigestion is very prolonged. Usually the severity of the symptoms increases as years go by and quite frequently in the later stages there is little or no comfort in life. In the majority of cases there are no clear cut attacks and rarely is there complete freedom in the so-called intervals.

The symptoms are usually—a sense of fullness in the epigastrium which may go on to an agonizing pressure, of which the patient remarks: "If I could only rip it open I would be in comfort"; epigastric bloating, occasionally to such a degree that the outline of the stomach can be readily seen. Belching usually accompanies this discomfort, is evidently intentional, and if it cannot be brought on easily relief is sought by forcing belching through the taking of soda bicarbonate or by inducing vomiting. The stomach is held high, and this is confirmed by the radiographic finding of a "cowhorn" stomach.

The site of the accompanying pain varies according to the situation of the reflex spasms set up in the lower end of the esophagus, stomach and duodenum. The pain in the region of the right shoulder indicates involvement of the liver. Local pain over the gall bladder region usually indicates a spread of the inflammation to peritoneum or sub-peritoneal tissues. The presence of nausea out of proportion to the other symptoms suggests lower duct involvement with spread to the pancreatic duct and pancreas. The occurrence of mucous colitis in the ordinary dyspeptic is in 90% of the cases associated with gall bladder disease.

In the past chronic gall bladder disease was looked upon as a disease of early middle age, but close inquiry fails to reveal in the great majority of cases a recent and definite onset. Even in those cases where the symptoms are described as beginning with some particular illness, a period of nervous tension, or a pregnancy, one finds that the patient has had slight symptoms without much distress, occurring irregularly at the usual time after meals, and that he had always to be more or less careful of his diet even during the

period of the greatest youthful vigor. Going further back, the outstanding feature of the disturbance in school days is the occurrence of bilious attacks. Another but much smaller group can be traced back to an acute cholecystitis or biliary infection in young adult life. A still smaller group can only be traced back to the first attack of biliary colic or the rather sudden onset of indigestion.

From a group of this type of indigestion, 185 cases (of which 125 have already been reported) were selected because gallstone colic, or definite radiographical evidence of stone shadows, or surgical findings—left no doubt as to the gall bladder involvement. The histories of these revealed that 67% had suffered from frequently recurring bilious attacks in childhood, 21% could not be traced beyond what was, or presumably was, a cholecystitis or an attack of appendicitis, while 12% could not be traced beyond the sudden beginning of indigestion or the first gallstone attack. When all cases of indigestion diagnosed as due to chronic gall bladder disease were included, the analysis changes these percentages but slightly—to 64%, 29% and 14% respectively. One thousand cases of all kinds of affections other than those diagnosed as indigestion due to chronic gall bladder disease, gave a history in only 7.8% of recurring bilious attacks in childhood. Of this 7.8% nearly all spoke of the attacks as being few in number.

In obtaining the information with regard to bilious attacks, a careful distinction was made between migraine or sick headaches, vomiting spells, acidosis and bilious attacks. None were classified as bilious attacks unless the onset was gradual, with malaise, loss of appetite, dull headache, nausea, etc., leading to vomiting, with slow recovery and a duration of two or more days. No attacks of sudden onset with nausea and vomiting and rapid recovery were included, nor where any of those which began with acute pain in the head, even if not one sided.

I have a firm belief that there is an ileal regurgitation associated with a definite symptom complex. The course consists of attacks, not clear-cut in onset. In the early stage the duration might be a few days to weeks, in the later stages extending for many months. They usually coincide with periods of over-work and over-tension, and the intervals with a change of

routine and an increase in physical exercise. The daily cycle is that the patient awakens tired, miserable and depressed, with some slight abdominal distress in the lower abdomen, especially on the right side. These distresses are usually vague. There is indifference or even distaste for breakfast, with slight gastric symptoms soon after. The patient feels unfit for work because of physical and mental depression. The noon meal is taken with indifference but rarely with distaste, and about two or three o'clock in the afternoon the symptoms abate gradually, with an increasing sense of wellbeing. There is no desire for the evening meal, and the patient, free of distress, is clear and bright throughout the evening, only to have a recurrence the following day. The taking of a laxative lessens the severity of the symptoms, but does not cut short an attack.

Investigation of these cases by the feeding of barium with the evening meal, and any nourishment that may be taken later shows that 30% or 40% of the barium is in the lower ileum before breakfast, and that there is a lessening ebb and flow in this amount until early afternoon, when all trace of it has passed from the ileum. One might look upon this as ileal delay if it were not that examination in the middle of the night shows that a very small percentage of the barium is in the ileum, also it does not conform in timing, though it does in symptomatology to the ordinary ileal delay.

Ileal regurgitation, as regurgitation, may occur in any individual without production of local or general symptoms, just as does regurgitation in the esophagus. The nature of the material regurgitated seems to determine the origin of symptoms in the case of regurgitation into the esophagus, and probably the same holds true of regurgitation into the ileum. The cause of this ileal regurgitation seems to be entirely related to obstruction in the colon beyond and a failure of the local musculature in the ileum.

Ileal delay, when not due to recent operation, has a course beginning with short attacks of a few days, coming on when over-tired or worried; the intervals at first are long, gradually shortening as the attacks lengthen, until the only periods of comfort coincide with complete change of routine, as when on holidays, with much physical exercise; the attacks gradually increase in severity of symptoms but are unchanged in character. The patient awakens bright and clear: has de-

sire for breakfast, and though tiring more easily than usual, has no particular discomfort until soon after an unrelieved lunch. The most pronounced symptom is a heavy distressing lethargy of body and mind—"I am dopey and miserable," "absolutely unfit"; with this may come vague unease or discomfort in the lower abdomen, and minor gastric symptoms. The heaviness lessens slightly during the afternoon. There is no relish for the evening meal, and the discomfort increases in the evening if there is "nervous tension" or an attempt at mental effort.

Inquiry rarely reveals a remote history of an acute abdomen; most frequently the patient can give no other information than that—"I was never robust but was able to do everything," and that one or both parents were nervous and easily exhausted.

In closing I wish to direct your attention to the importance of determining the presence of migraine of the hereditary type in the family of the individual suffering from chronic gastrointestinal disease, and to add my voice to the warning already given as to the bad and even disastrous results which follow upon laparotomy in such individuals.

Five years ago on reviewing the case records of patients who on my advice had submitted to laparotomy for various chronic gastro-intestinal diseases, I found that of those who said they were no better or worse nearly 30% were migraine cases, while of those in whom the results had been satisfactory, none gave a history of migraine. Since that time I have seen sixty-six patients, who having a history of hereditary migraine had had the abdomen opened for "indigestion" or abdominal distress. All but two were infinitely worse and these two were approaching the menopause at the time of operation.

Such results as these, taken together with the warnings from many sources should deter a surgeon from opening the abdomen of a migraine patient except where life is endangered by some clearly defined condition, or possibly in the case of a migraine patient who had passed the menopause. It is such migraine patients that provide most of those physical wrecks, who with three, four, five, six, seven, yes, even nine laparotomy scars are only too frequently seen in the hospital wards.

THE DETERMINATION OF RETINAL BLOOD PRESSURE*

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The blood-pressure in the retinal vessels can now be as directly determined as that in the brachial artery. The same principle is utilized. In the determination of the systemic blood-pressure by the palpatory method, you will recall that up to a certain point as the pressure against the artery increases the pulse excursion increases. The pulse excursion reaches its maximum when the pressure applied against the artery is equal to the diastolic blood-pressure. Further increase of pressure causes the pulse excursion to progressively diminish, till at the point when the

vex. This shape is safer than a concave surface, and can be placed more accurately against the eyeball.

The instrument must be applied directly against the conjunctiva. The most suitable point is the outer portion of the eyeball, a little posterior to the insertion of the external rectus muscle. The instillation of two drops of holocain facilitates the examination. The procedure is quite painless,—only the sense of pressure is felt. It is inadvisable however to employ a pressure of over 150 grams;—this is less than that which the patient would use in squeezing his own eyeball.

The instrument must be applied perpendicularly to the globe and in the horizontal plane, and kept so throughout the examination. It must not be allowed to slip above, below, or posteriorly.



Fig. 1. The Ophthalmo-dynamometer of Bailliart.

pressure against the artery is equal to the systolic pressure, it becomes impalpable. Similarly in the determination of retinal blood-pressure, pressure is applied against the eyeball, but the arteries are directly observed with the ophthalmoscope, and criteria are visual.

Normally the pulse excursion in the retinal arteries is too slight to be detected ordinarily, but with the magnifying ophthalmoscope of Gullstrand it can be observed. However, if while looking at the fundus with the ordinary ophthalmoscope, the observer exerts gently increasing pressure on the globe, an arterial pulse will appear. As the pressure on the globe increases so does the amplitude of the pulsation,—to a certain point; and then grows less and disappears. If the pressure is further continued, suddenly the artery will be effaced and, blended with the tissue anemia about it, is no longer visible.

Bailliart of Paris in 1917 designed a spring tension instrument for compression of the eyeball, which he has called an "ophthalmo-dynamometer." (Fig. 1.) The graduations are in grams water, and the graduated rod measures up to 150 grams. The terminal disc which serves as the compressing surface is very slightly con-

With the dynamometer in position, the observer concentrates on the arteries at the disc. The electric ophthalmoscope is essential, as the position of the dynamometer interferes with the reflection of light by an ophthalmoscopic mirror.

On the dynamometer is a raised ring which the observer grasps between the thumb and index finger of the left hand. After the instrument is placed in position, the free fingers rest against the temples to steady the hand. Pressure is commenced gently. As soon as the pulse appears, the light from the ophthalmoscope is thrown on the graduated rod and the reading noted. Pressure is then continued till the pulse disappears when a second reading is made.

The movement of the head necessary to note the findings, after a little practice, will occasion no difficulty. Still with a free finger one could hold the rod in the registered position, and bring the instrument to the light.

Though it is the maximal pulsation that theoretically denotes the diastolic pressure, practically there is so little difference between this and the first visible arterial pulsation, that the latter can be considered a proper criterion.

Though the compression should proceed gently the readings must be determined without undue

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delay; otherwise changes in intra-ocular tension tend to take place, and too high readings may result.

The dynamometer readings indicate the gram pressure applied to the eyeball, but do not give the pressure transmitted to the retinal arteries. Bailliart has particularly studied how intra-ocular tension is modified by outside pressure, and has embodied his results in a table. Employing this, one needs but know the initial intra-ocular tension to translate the dynamometer readings at the appearance and disappearance of the arterial pulse into terms of millimeters mercury.

In eyes with normal tension, it generally requires a dynamometer pressure of 25 grams to induce the appearance of the arterial pulse; and 60-70 grams to cause its disappearance. Translated in terms of the table, this means that the average retinal blood-pressure is diastolic: 30-35 mm. mercury; systolic: 65-75 mm. mercury. Among normal individuals, all other factors being equal, the findings are fairly uniform.

Under physiological conditions, the pressure in the retinal arteries is entirely dependent on the systemic blood-pressure, and follows its variations. Knowing the latter one can safely predict the former, and vice versa. Multiplying the systemic diastolic pressure by .45 will give the retinal diastolic pressure; and multiplying the systemic systolic pressure by .54 will approximate the retinal systolic blood-pressure.

The diastolic pressure in the retinal arteries is almost on the capillary level. The systolic pressure has not fallen proportionately so much, for to it belongs the duty of overcoming the great capillary resistance; and in this task its energy will be quickly spent. In the capillary bed itself there is no pulse, and diastolic and systolic pressures becomes one.

The venous exit-pressure oscillates with the cardiac cycle above and below the intra-ocular tension. Accepting Priestley Smith's value of normal intra-ocular tension, 24 mm., the venous exit-pressure then would be between 22-25 mm. mercury.

The blood-pressure in the capillary bed is practically uniform. Its value cannot be directly measured, but we know it must be between the diastolic pressure of the central artery, and the pressure in the central vein; that is, between 35 and 25 mm. mercury, or about 30 mm. The value inferred as the average pressure in the

retinal capillaries is similar to that which physiologists have found for the capillaries of the skin.

One can diagnose pronounced cases of retinal hypertension without apparatus by noting the stronger finger pressure required to suppress the arterial pulse. Though it is more difficult, the practiced finger may even recognize also when it requires more than the usual pressure to induce the arterial pulse.

Measured by the dynamometer, the pressure in the central artery may reach to 120 mm. diastolic. The heights that its systolic pressure may reach we cannot at present measure, since it is both impracticable and inadvisable to exert with the dynamometer a pressure greater than 150 gm. When this pressure does not suppress the pulse we merely note: Retinal systolic pressure > 150 gm.

Hypertension may exist in the retinal vessels without any noticeable alteration in their appearance. The sole objective sign is often that furnished by the dynamometric study of the reactions of the arterial pulse to ocular compression.

Sudden attacks of visual obscuration occurring in apparently healthy subjects is suggestive of retinal hypertension. Black specks that come and go independently of the ocular movements is a suspicious complaint that is perhaps most frequently elicited. Occasionally there is noted in the periphery of the visual field instead of black specks a movement of sparkling points that abruptly appear and disappear.

Many patients with vague visual disorders often yield completely negative objective findings. Though the individuals complain of seeing objects through a haze, the visual acuity and the visual fields may be normal. This subjective condition is usually ascribed to a failure of the accommodation, and glasses are prescribed accordingly; but in reality these are often cases of retinal hypertension. It is important that such a condition be discovered, for, if warned by the local increase of tension we locate the cause and treat the patient accordingly, we may avert further inroads and generalized changes.

The finding of retinal hypertension may be the first suggestion of systemic involvement. Here is a case in point: Laborer, age 32, a heavy eater and well developed, complained of a haze constantly disturbing his vision. The ophthalmoscopic findings were negative, but the blood-pressure in the central artery was: diastolic, 70;

systolic > 150 . The systemic blood-pressure was: diastolic, 170; systolic, 250. The Wassermann test being negative, general measures were instituted, including regulation of diet, purgation, and a course of potassium iodid. In two months the haze had completely disappeared; the retinal blood-pressure had gone down to: diastolic, 60; systolic, 120;—the systemic pressure was down to 130/205. The patient then discarded his regimen and resumed his former habits, with a recurrence of all symptoms resulting a month later.

Whenever the retinal blood-pressure shows an abnormally high value, we should first consider systemic conditions as the probable basis. Normally the retinal diastolic pressure is .45 of the systemic diastolic pressure; but in hypertension cases the retinal diastolic pressure is more than proportionally elevated. The retinal diastolic pressure is particularly high in the retinitis of pregnancy, and in albuminuric retinitis. In these cases the local hypertension may precede all other ophthalmologic symptoms. In obscure forms of retinal hypertension, syphilis is to be thought of as a frequent factor.

With increased pressure in the cerebrospinal fluid, the retinal blood-pressure is frequently elevated, often without the systemic pressure being changed.

The most formidable danger of retinal hypertension is hemorrhage. Another complication is angio-spasm, engendered by the overdevelopment of the muscular coat that occurs as a compensating effort in these hypertension cases.

Retinal hypotension is less frequently encountered than retinal hypertension, and generally accompanies a diminution of systemic pressure. This condition occurs acutely in syncope, severe hemorrhage, and before death.

The treatment of circulatory disorders of the retina must in each case be directed against the special etiologic factors involved. Reliance must be placed on general measures, and particularly the patient's regimen must be controlled. Locally very little can be done. The association of internist and ophthalmologist is as indispensable in the treatment as in the diagnosis. The ophthalmologist must actively direct the therapeutic measures, just as he would in a luetic lesion. The importance of the eye is so great that the ophthalmologist must prepare to accept full responsibility in whatever relates to it.

The peripheral dilatation induced by the nitrites means an increased flow in the retinal arterioles, capillaries, and venules. This action makes the vasodilators as dangerous in certain cases as they are valuable in others. Suppose a patient with systemic hypertension has retinal hemorrhages, a marked retinal hypertension, and dilated vessels. The administration of these drugs in this case would but favor further hemorrhages and exudation.

Another case of systemic hypertension may show constricted vessels, surrounded by perivascular connective tissue. The character of the arteries, and an associated low venous pressure, indicate that the process of obliteration has already affected the capillary bed. The nitrates—would that their action was less fugacious!—will have here a desired and favorable effect.

The iodides in high dosage tend to diminish the viscosity of the blood,—it is probably by this means that they lower the blood-pressure,—but this diminished viscosity is favorable to retinal hemorrhages, and this possibility should be in mind in the use of this drug.

In arterial spasms the vasodilators are the chief agents in the symptomatic treatment. Opiates act well as adjuvants. When the spasms tend to recur, antispasmodics of the type of valerian are indicated. Arterial spasms produce subjectively attacks of transient blindness. Where thrombotic formations exist, the spasms favor arterial obliteration. Hence it is well for a patient thus afflicted to keep an ampoule of amyl nitrite always about him for use the moment an attack of obscuration supervenes.

My personal interest in the determination of retinal blood-pressure dates from my contact with Bailliart in Paris in the spring of 1921. Bailliart recently has embodied his researches in this field in a most interesting and illuminating monograph, the translation of which I have undertaken. The foregoing article is wholly based on Bailliart's work, and is submitted merely as an introduction to this book, which now in French, will shortly be available in the English language.¹

25 E. Washington St.

¹This instrument can now be obtained from Von Mueller & Co., 1835 W. Van Buren St., Chicago, who are the American agents of the French manufacturers.

²Bailliart, P. *The Retinal Circulation in Health and Disease*. Translated from the French by James E. Lebensohn. (Williams and Wilkins, Baltimore, Md.) To be published.

HEMATURIA FROM A TRAUMATIC RUPTURED KIDNEY

E. C. KELLY, B. S., M. D.

PEORIA, ILL.

Blood in urine is a warning of a pathological disturbance usually caused from disease of some part of the urinary tract. It may be due to an injury of a portion of the urinary tract, or disease of other organs involving the urinary apparatus and there are also a limited number of general diseases which produce a hematuria. This condition may be apparent macroscopically or microscopically, it may be periodic in character or may persist for days or even weeks. Blood may occur only in the urine in the form of hemoglobin, that is without the presence of erythrocytes microscopically.

Diagnosing a case of hematuria, there are usually other symptoms associated with it which will give suggestions of what may be the etiological factor. Injuries of the kidney may cause hematuria and the diagnosis is usually very obvious.

The kidney is firmly held in place by its attachments while its consistence is such as to preclude elasticity. Hence a blow or undue pressure may cause a rupture. All the causes of injury that may take part in the production of lesions elsewhere may also induce renal lesions which may consist of contusion, laceration or rupture.

The most common ways of obtaining a ruptured kidney are: crushing injuries in lumbar region, falling on back or side from raised position to the ground, falling from height to feet or buttocks (indirect violence producing rupture), (kicked by a horse), (back or side), kicked or kneed (mostly football accidents), run over, hit in the back by falling objects (usually when stooping), external wounds (stabs, etc.), falling while walking, and glancing blows from passing vehicles.

The slight injuries of the kidney are treated expectantly while severe cases require surgery. The two salient symptoms of severely injured kidney are hematuria and perirenal hematoma.

If the hematoma constantly increases it demands immediate operation to prevent death from hemorrhage. There is danger that a hematoma may become infected if an operation is not done and there is a second danger of fibrous coating around the kidney which may prevent its

functioning and give rise to a chronic sclerous perinephritis.

Rupture usually occurs along the line radiating from renal pelvis. The line of cleavage usually follows direction of uriniferous tubules.

The first instance of a nephrectomy for a rupture was performed in 1883 by Dr. Henry Rowden at an infirmary for children at Liverpool. Patient died of cystitis and pyelonephritis 23 days following operation. Indications for nephrectomy are: Renal pedicle is torn, the kidney is lacerated in several places, a tear extending towards the renal pelvis, but the kidney having a short pedicle and can not be delivered; an extensive rent in renal pelvis (which can not be sutured), or ureter is completely avulsed and if the injured kidney is hydronephrotic or otherwise severely diseased.

Max Talbot, eight years of age, with a negative family history and a negative history of any previous illnesses. About 7 P. M. Aug. 13, 1924, while running across the street, was hit by a fender of a Ford coupe in the left lumbar region, which knocked him down, causing two small lacerations of forehead. He got up and ran over and sat on the curbing. The motorist stopped to take him home, but he got up and ran home, a distance of two blocks.

On examination, his pulse was 90, good quality, with rigidity of upper rectus on the injured side and a small bruised area about size of a dime in left lumbar region. He was sent to hospital, complained of pain in his upper left abdomen, was thirsty and vomited several times. On second examination immediately after entrance to hospital his pulse was 108 and weaker in quality; rigidity of upper left abdomen still present, pain more severe, dullness of the percussion note lateral to anterior border of rectus compared to right side, left side showed a flattening of the normal contour and with severe hematuria. The perirenal hematoma was increasing in size so he was sent immediately to the operating room with a diagnosis of ruptured kidney. The kidney was found to be ruptured transversely and with a tear in the renal pelvis. The upper pole of the kidney was found upward and near the diaphragm and the lower pole was found to be downward and anterior with attachment to upper portion by only fragments of the renal capsule. Nephrectomy was done and he had an uneventful recovery.

THE TREATMENT OF PERTUSSIS BY ROENTGEN-RAY*

JULIUS H. HESS, M. D.

CHICAGO

In March, 1923, Bowditch and Leonard reported a series of cases of whooping cough in

I first became interested in this method of treatment early in 1923 following the receipt of a personal communication from Mr. J. B. Zingrone of Chicago, in which he cited cases of whooping cough which he had treated with dosage similar to the one I adopted in my series of cases and in which he had obtained very good results.

*Read before the Inter-State Post Graduate Assembly of America, Milwaukee, Wis., October 27-31, 1924.

which the Roentgen ray treatment was either used alone or in conjunction with vaccines and infernal treatment. At the American Pediatric Society meeting held at Frnech Lick Springs in May, 1923, Herman and Bell read a paper on a study of 300 cases of pertussis in a hospital. They treated their cases without the use of Roentgen rays. In the discussion of this paper, Faber, of San Francisco, and I each made a report of our experiences with limited groups of this same type of case treated by the use of Roentgen rays. In the past year several papers have appeared, those of special interest being individual papers by Bowditch and Leonard, a report by Kingston and Faber, and one by Struthers. The experiences of the various clinicians and their deductions coincide closely. Believing that the successes and failures, as well as the dangers, of this treatment are worthy of further emphasis warrants me in making a similar report covering a group of 102 cases which have come under my care during the past 20 months.

One of the most important questions bearing on this newer treatment is whether results warrant changing the state and municipal health department laws now on the statute books. In Illinois pertussis cases are quarantined on the premises. To institute this type of therapy it becomes necessary to move them to some private or public institution where treatment can be given. To carry on this experimental work, the Departments of Health of the State of Illinois and the City of Chicago have granted me permission for a limited period to remove cases from their homes for treatments. They are moved in private conveyances and with the understanding that due care will be taken not to expose others to the contagion.

Most of our cases have been treated with the following technic: With 4 ma., using a 2 mm. aluminum filter and a 7-inch spark gap, at a distance of 14 inches, a five minute exposure was made, the exception being in young infants when the first treatment at least was given for a shorter period, usually $2\frac{1}{2}$ to 3 minutes. In the majority of cases the treatment was given with the child on its back in the recumbent position. In a few cases the position was changed during the course of treatment, half the exposure being given with the child on its back and the other half while lying on the abdomen. In the remainder the anterior and posterior exposures

were alternated. In no instance was the treatment repeated in less than five days, while in some the interval was as long as seven days. The number of treatments varied from one to four. More recently we have treated a few cases with the longer exposure, using 8 minutes with the tube set at 5 ma., 2 mm. filter and a 7-inch spark gap, at a distance of 14 inches. Bowditch and Leonard's dosage was 4 ma., a 1 mm. aluminum f:Her and a 6 to 7 inch back up spark at a distance of 28 inches. Struthers has recommended a longer exposure with the heavier filter.

In the study of a series of flouroscopic examinations and plates in a considerable number of cases marked hyperplasia was noted in the glands about the hilus and also in the peribronchial glands. In many instances there was a diffuse mottling extending for a considerable distance along the bronchial trees. These findings are indicative of a more or less generalized pulmonary involvement and are similar to the findings which have been described by the other authors whose work has been quoted.

The justification for the treatment is based on these findings and the knowledge that the Roentgen ray exerts a beneficial influence, as evidenced by the tendency to reduction in size of hyperplastic lymphoid glands. Bowditch states that "this reduction in size is more theoretical than actually demonstrable in whooping cough, but successful clinical application makes the use of the Roentgen ray rational. Whether there is also a direct action on the bacteria is for the present an open question." They reported definite changes in the white blood counts of those cases successfully treated and whether this was due to direct action on the hematopoietic system or secondary to some other causes also remained unexplained.

The thyroid can and should be protected at all times by a lead sheet. That there is great danger of producing thymic trophy cannot be denied when we administer repeated doses similar to those given to infants suffering from hyperplasia of the thymus. Bowditch recommends four treatments on alternating days and in amounts as above quoted and states: "The total dosage was well within the limits of safety, the four exposures totaling less than one-half of an erythema dose." Personally, I am not convinced that the amount recommended and administered

at such short intervals is not dangerous to the thymus and I have therefore used the longer interval of five to seven days between the treatments and the minimum number of doses necessary to give relief, rather allowing the disease to run its course unmodified than to over-expose neighboring parenchymatous tissues. This may account for some of my failures. In speaking of the danger to neighboring tissues I have in mind a case of myxedema presented by Dr. Joseph Brennemann in a child who had received treatments for thymic enlargement during early infancy. The relation of the early treatments to the thyroid atrophy in this case can only be surmised. In my own opinion, there are dangers which cannot be too strongly emphasized in the repeated application of Roentgenray therapy.

The time at which the treatment should be begun is of the greatest importance. I have had no experience with the treatment of cases before coughing has begun. In six cases treated before the paroxysmal stage no improvement was noted with the first treatment in 4; in 2 the course was a very mild one. If one may be allowed to draw conclusions based on pathology and the possibility of arresting the development of a future immunity, I believe treatment should be delayed until the children have reached the paroxysmal stage of the disease. In such cases I believe one is justified in concluding that once the disease has reached the paroxysmal stage immunity from further infection is assured, even though the disease be more or less abruptly arrested. This conclusion is reinforced by our clinical results.

The most striking effects of treatment are noted in the tendency to decrease or relieve the vomiting following the paroxysms and the diminution in the severity and in the number of paroxysms. In some cases marked improvements followed within 24 hours after treatment, the treatment being almost immediately followed by evidence of moderation in the clinical picture. In some, even the most favorable cases, however, there followed during the first twelve to eighteen hours evidences of increased irritability, wakefulness and nervousness on the part of the child which was interpreted as an evidence of possible overdosage. In others, there was no evident clinical improvement until the treatment was repeated. In some cases the entire series of treatments failed to give relief. Briefly grouping

our series of cases according to age, stage when treatment was begun and number of applications the results may be summarized as follows:

***—Striking result with marked relief of all symptoms within a day or two of the last treatment and usually with improvement with the first treatment when more than one was given.
**—Considerable relief with amelioration of the more distressing symptoms during the course of or shortly following the treatments.
*—Questionable results—seemingly some result.
0—No result.

1924 SUMMER AND FALL GROUP

Age Incidence	No. of Cases	Results ***	**	*	0	Per cent of***	Per cent of**
Less than 1 year	11	5	..	1	5	45	0
Between 1 and 2	11	5	4	..	2	45	36
Between 2 and 4	16	8	4	2	2	50	25
Between 4 and 6	14	5	8	1	..	35	57
Between 6 and 10	10	4	4	2	..	40	40
Total	62	27	20	6	9	Av. 43	32

1924-1925 WINTER GROUP

Age Incidence	No. of Cases	Results ***	**	*	0	Per cent of***	Per cent of**
Less than 1 year	3	2	0	1	0	66.6	0
Between 1 and 2	4	1	1	1	1	25.	25
Between 2 and 4	12	4	2	1	5	33.	16.6
Between 4 and 6	11	2	2	2	5	18.	18.2
Between 6 and 10	10	1	6	1	2	10.	60.
Total	40	10	11	6	13	25.	27.5

In the summer and fall series of sixty-two cases, 43 per cent resulted in striking improvement of the symptoms and could be classed as ***; 32 per cent in definite but less marked improvement, and 25 per cent resulted in little or no change in condition of the children. In the winter group of forty cases, 25 per cent showed striking improvement, 27.5 per cent definite but less marked improvement, and 47.5 per cent little or no change. The winter results as a whole were less striking than those of the summer and fall.

The 2-4 year group gave somewhat the best results, while Bowditch and Leonard believed their most striking results occurred in the group under one year of age. I wish again to emphasize the fact that there may be no shortening of the course, the relief experienced being limited to lessening of the acute symptoms, such as vomiting, paroxysmal coughing and attendant loss of weight and insomnia.

Stage—Six cases were treated in the pre-whoop stage. Of these, only one failed to develop paroxysmal coughing later, the others requiring further treatment. Ninety-six had whooped before treatment was begun. Fourteen cases received their first treatment in the fourth week. Of these, one could be classed as ***, 6 as **, 1 as * and 6 as 0. Three received their first treatment in the fifth week. One was classed as ***, 1 as ** and 1 as *. Two received their first treatment in sixth week. One was classed as ** and 1 as

0. It will, therefore, be noticed that in cases treated late in the disease only a few striking results were obtained.

NUMBER OF ROENTGEN-RAY TREATMENTS AND RESULTS 1924
SUMMER AND FALL GROUP

No. of Treatments	Total Cases	Results ***	Results **	*	0	Per cent of ***	Per cent of **
1	16	10	3	1	2	62.5	20
2	33	12	15	1	5	36.	45
3	10	4	3	2	1	40.	30
4	3	1	..	1	1	33.	0
Total	62	27	21	5	9	43	34

1924-1925 WINTER GROUP

No. of Treatments	Total Cases	Results ***	Results **	*	0	Per cent of ***	Per cent of **	Per cent of *	Per cent of 0
1	5	1	0	2	2	20	0	40	40
2	16	3	2	3	8	20.	12.5	20	50
3	16	6	6	1	3	37.5	37.5	6.6	18.7
4	3	0	3	0	0	0	100.	0	0
Total	40	10	11	6	13	25.	27.5	15.	32.

In the summer and fall group of those receiving one treatment, ten, or 62.5 per cent of sixteen cases, were recorded as *** and they were relieved to the extent that treatment was stopped. Three showed little or no relief. As an increasing number of doses were needed to influence the course in individual cases, the percentage of striking results became less in each group, the *** recorded being 36 per cent with 2 doses, 40 per cent with 3 doses and 33 per cent with 4 doses.

In the winter group, one treatment resulted in 20 per cent of *** and no ** cases; two treatments in 20 per cent of *** and 12.5 per cent of ** cases; three treatments in 37.5 per cent each of *** and ** cases, and four treatments in no *** and 100 per cent of ** cases.

Of the seventeen cases receiving vaccines in three to five doses without improvement before the Roentgen-ray treatment was started, there were 6***, 4**, 1* and 6 showing no result after Roentgen-ray treatment. In six cases in which vaccine was given after failure of Roentgen-ray treatment, there was no evident improvement which could be construed as related to the therapy.

Blood Findings.—On the whole the best results may be looked for in those patients having high white blood counts with from 50 to 80 per cent of lymphocytes. One case, however, with white counts varying between 51,000 and 61,000, with approximately 70 per cent of lymphocytes, required three exposures before a decided result was obtained.

Pertussis Complicated by Pneumonia.—In the six cases of nontuberculous pneumonia which came under treatment, marked general improve-

ment with lessening of paroxysmal coughing followed the institution of Roentgen-ray therapy. The number of exposures varied from one to three, and they were given at two and three day intervals when repeated.

We soon learned that it was necessary to keep in touch with the patients personally to properly interpret the effect of treatment, considerable difficulty being encountered in getting parents to evaluate results in our earlier cases. When we wrote to a number of mothers several months after treatment, for their interpretation of the benefit, they reported no improvement. This was because the course was often not materially shortened, although the symptoms in many cases were definitely improved, as evidenced by the daily tabulation, on special cards furnished the patients, of the number of spells of vomiting, paroxysms of coughing both during the day and night, improvement in the general condition of the child. I should therefore inform the parents that the object of the treatment was to alleviate the acute manifestations rather than to shorten the course of the disease.

SUMMARY

Before offering conclusions as to our own experiences in the light of the limited amount of work which has been done, I feel justified in quoting the conclusions of the men who have previously reported series of cases. Bowditch states that in 300 cases of whooping cough treated by the Roentgen ray, there was certain evidence that more than 80 per cent. were benefited by the treatment. Only one fatal case occurred in his entire series. The more favorable results seemed to be obtained in the early paroxysmal stage of the disease and in the younger children.

Leonard reports that in 400 cases compared with 200 cases not so treated, the acute symptoms were modified in at least 75 per cent. of the cases when used in the paroxysmal stage. In children under 1 year of age nearly 100 per cent. were definitely relieved. He believes that this condition may be due to the fact that the dosage used more nearly met the needs of the younger patients and that modification is necessary in the treatment of older patients. He further concludes that Roentgen rays do not shorten the course of the disease to a marked extent and when used in the early stage apparently do not prevent the onset of the paroxysms.

He believes that Roentgen ray furnishes one of the best means of at least controlling some of the severe symptoms of whooping cough. It should be noted that Bowditch and Leonard reported on the same group of cases.

Struthers, tabulating 45 cases, observed that 15 per cent. of his cases were promptly cured, that is, the whooping cough ceased entirely within 48 hours and did not return; 45 per cent. showed relief within four or five days, as evidenced by a considerable amelioration of symptoms; 40 per cent. showed no appreciable change in condition. He believes that the larger the dose of the ray given the greater apparently is the improvement. All of the prompt cures in his series except one received larger dosage—he fails to state the dose used in his paper. He concludes that the earlier in the paroxysmal state the treatment is begun, the greater the probabilities of relief.

Kingston and Faber used one, two and three exposures at weekly intervals. Twenty milliamperes minutes were given, with a distance of 12 inches, 9¾ inch spark and ¼ mm. copper filter. They reported 24 cases, varying from 7 months to 13 years of age. Cessation of vomiting was noted even when the whoop continued. The tendency to residual cough they believed was lessened and the course was shortened and less severe.

Dr. Robert A. Black of Chicago, in a personal communication, has summarized his results following treatment with the Roentgen rays of 100 cases as follows:

In 22 instances the mother did not return the child for a second treatment because of the great improvement.

In 54 cases the mothers thought well enough of the treatment to return for a second treatment.

Dr. Black is confident that at least 40 per cent. of this group were distinctly benefited.

Twenty-four cases showed little or no improvement.

CONCLUSIONS

1. Treatments should not be given before the paroxysmal stage is reached because their chief function is to lessen the severity of the disease. Incidentally, in some of the cases there was a striking shortening of the course. This must be considered of secondary importance, however, and

the treatments should not be continued with the idea in view of attaining such a result.

2. In the summer and fall group, *** results were noted in 43 per cent, or 27 of 62 cases. In ten of these, only one treatment was required, in 12 two treatments, in 4 three, and in 1 four treatments.

In the winter group the number of *** results were fewer, a total of 25 per cent or 10 of 40 cases. Of these, one received one, three received two and six received three treatments, respectively. The ** plus results were 34 per cent in the summer and fall group and 27.5 in the winter group. The negative results were approximately 25 per cent in the summer and fall cases and 47 per cent in the winter cases.

3. In our cases of secondary pneumonia, there was general improvement after Roentgen-ray treatment.

4. In my opinion, excessive exposure of young children to the Roentgen ray is dangerous. Therefore the neighboring organs should be protected and only the minimum number of exposures necessary for relief are to be given.

5. I believe the results, both immediate and remote, of Roentgen ray treatment in whooping cough should be given further study before the method is recommended for general use.

6. It is to be remembered that the adoption of this as a routine treatment would require a change in the quarantine regulations in most cities to permit the removal of patients from their homes to places of treatment.

104 S. Michigan Avenue.

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Colored bridegroom, while standing at the altar, wore such a worried look that he disturbed the best man. Leaning over, the best man whispered to the groom, "What's the matter wid you, Rastus, has you lost yer ring?"

"No, nigger, I ain't lost no ring—dat is safe enough, but I done lost my enthusiasm."—Exchange.

OBSERVATION OF THE FUNDUS OCCULI IN TRYPARSAMIDE TREATMENT OF GENERAL PARALYSIS OF THE INSANE*

J. H. ROTH, A.B., M.S., M.D.

KANKAKEE, ILL.

Although I do not any longer hold a position on the Staff of the State Hospitals of Illinois, I was very fortunate to be invited to observe the fundi of the general parietic patient at the Kankakee State Hospital being subjected to the tryparsamide treatment. As this method of treatment of general paralysis was only released by the Rockefeller Institute for the general practise, the first of the year, I will frankly confess that I was somewhat ignorant at first just what to expect in the course of the treatment. When Dr. Robertson sent the invitation to submit a paper at the meeting and later in a talk with Dr. Woodruff I believe that many ophthalmologists over the state might be in the same predicament that I found myself when the proposition was presented to me by Dr. Reid, the State Psychiatrist. I believe that our experiences at Kankakee together with a short review of the work to date might be of value to this gathering. This is simply a preliminary report as the results that we have observed may be altered after another course of treatment or at the end of another year. I hope that I may have an opportunity of making a subsequent report at some later date.

The class of patients whom we had under observation at Kankakee were and are in a worse state of delapidation than will be experienced by the consulting ophthalmologist in observing the average general parietic or neurosyphilide. Consequently we exercised more liberties in regard to injuries to the optic tract than the consulting ophthalmologist may wish to take in handling patients in private practise or patients whose deterioration has not reached such a deplorable state.

Tryparsamide is a pentavalent arsenical closely related to atoxyl and arsacotin, and belonging structurally to that group which seems to have an especial affinity for the optic tract. It was synthesized by Jacobs and Heidelberger¹ and its biological action studied by Brown and

Pearce at the Rockefeller Institute in 1915. The first publication appeared in 1919. This drug was first used in the treatment of trypanosomiasis—hence the name: this work was reported by Pearce in 1921.² In 1923 Lorenz, Loevenhart, Bleckwenn and Hodges³ reported findings in the treatment of neurosyphilis.

Tryparsamide is peculiar in the fact that its therapeutic index is low and if it was to be judged by its spirochetical action it could not be given serious consideration, as its index is from $\frac{1}{4}$ to $\frac{1}{3}$ that of arsphenamine, and neo-arsphenamine. However being a pentavalent arsenic compound its penetrability and excretion is much more rapid than that of arsphenamine or neo-arsphenamine. It also is supposed to have the faculty of building up the resistance of the patient to the toxins of lues. In the earlier phases of syphilis when the spirochetes are ranging in all parts of the body we must rely on a powerful spirocheticide. In the later stages of the infection when the spirochetes have become localized in the tissues of the body that are practically inaccessible to the ordinary spirocheticide we must resort to a drug with a high penetrability or one that will reinforce the patients' resistance or a combination of both actions. Mehrtens, Kalos and Marshal⁴ have reported that tryparsamide accumulates in the brain tissue while arsphenamine tends to remain in the blood stream. In their series they found that nervous tissue was chemotrophic to tryparsamide as compared to arsphenamine. The spinal fluid showed tryparsamide in 2-3 times the concentration as arsphenamine. Fordyce⁵ and his colleagues believe that "The arsenicals combine in varying degrees with the protein substances in the blood stream and tissues, pass through an insoluble phase and through autolytic processes become soluble, exerting their spirochetical influences in this latter stage. This differentiates between the reactivity of the pentavalent compounds and those of the arsenio type and also the trivalent group. Our investigations have never demonstrated the presence of unchanged arsphenamine in the urine." Young and Muehlberger have concluded that part of the tryparsamide is excreted unchanged in the urine. These factors are what have recommended the drug as an aid in the treatment of neurosyphilis, especially general paralysis of the insane.

*Read before the Section on Eye, Ear, Nose and Throat, Illinois State Medical Society, Quincy, May 20, 1925.

It is hardly necessary to call the attention of ophthalmologists to the constant danger of injury to the optic tract during the progress of neurosyphilis. Many have watched the narrowing fields and the increasing pallor of the disk during intensive antispecific treatment. We have all had the disheartening experience of discovering reduced fields and tubular vision in unsuspected neurosyphilis. With these facts held constantly before us we are placed in a different position as consultants in determining whether injury to the optic tract is the result of the disease or the administration of some drug being used in the treatment. However, when we see a patient in one of the exacerbations so common in general paralysis we are tempted to risk the dangers of blindness from treatment in order to rescue the individual and relieve him of some of the distressing mental symptoms. When we consider that the average prognosis in an established general paralysis, according to Rosenoff, is three years, we can review his history and in consultation with the psychiatrist decide on our future course.

Fordyce, Rosen and Myer⁶ have demonstrated that tryparsamide leaves the blood stream more rapidly than any of the commonly used arsenicals, consequently larger doses of the drug can be administered. An average estimated from 304 specimens showed that 46.8% of the tryparsamide leaves the blood stream almost immediately, 53.2 remaining in the blood stream. At the end of fifteen minutes 92.35 of the arsenic had left the blood stream. At the end of seventy-two hours only .012% was present. However, in this series, there were individuals who retained more pentavalent arsenic in the blood stream at the end of one week than others did at the end of fifteen minutes. Fordyce⁷ and his colleagues have also reported findings on several series of cases, showing that some individuals have more ability to eliminate arsenic than others. This same finding was borne out by Young and Muehlberger⁸ in estimating the amount of arsenic excreted through the urine, during the treatment with tryparsamide. To quote their conclusion, "At least part of the tryparsamide is excreted unchanged in the urine. Three out of four individuals studied excreted 88-95% of the drug within the first twenty-four hours. Certain individuals showed a much slower rate of excretion. These individuals retained the arsenic over a

much longer period of time and therefore may be more susceptible to the cumulative effects of the drug."

In any series of tryparsamide injections it is only reasonable to suppose that we will find individuals who are unable to eliminate the arsenic as rapidly as we are led to suppose that they should. Consequently we may give the second injection of tryparsamide with the individual retaining a large amount of the original dose. With this residue, together with the second injection, the patient is retaining considerable amount of pentavalent arsenic when we administer the third dose. With a drug that has the peculiar affinity for the optic tract that tryparsamide is supposed to have we may expect to find injury to this sensitive organ of special sense.

In a routine fundus examination of neurosyphilides we are amazed to find the frequent occurrence of arteriosclerosis. In fact, in our series it seemed to be more the rule than the exception. Whether this condition is the result of the disease or the treatment already undergone is another question, but atheromatous changes are common in lues and arteriosclerosis is a close relative. In routine examination of the fundus oculi in general paralysis finding the relative high percentage of arteriosclerotic fundi we may only guess at the pathology in the kidney, and where there is pathology in the kidney we may expect to find limited elimination. Finding marked arteriosclerosis in the fundus we should be wary of elimination and on the first indication of narrowing fields either reduce our dosage, or stop treatment altogether and dehydrate the patient as rapidly as possible.

Fordyce, Rosen and Myer⁹ in their effort to make the neuroaxon more accessible to the penetration of intravenous medication attempted to dehydrate the individual previous to the administration of arsenicals. Weed and McKibben first demonstrated that a hypertonic solution of sodium chloride given intravenously or per rectum lowers intracranial tension and subsequently pressure changes in the cerebro spinal fluid. These findings were corroborated by Foley and Putnum; Hadeb, Cushing, Foley, Sachs and Belcher; Dowman and Fay, in intracranial surgery, intracranial pressure and choked disks. Fordyce and his colleagues administered 100 c.c. of 15% sodium chloride six hours before the intravenous injection of arsenic. Lumbar punctures were

made from 2-48 hours following and the arsenic contents estimated. In their series of 76 specimens it was found that there was a more even distribution of arsenic in the cerebrospinal fluid. It is an old and routine treatment where we have edema of the disk or retina, or reduced fields and vision with doubtful etiology to dehydrate the patient by strenuous elimination. In our series of cases we did not dehydrate the patient by the technique of Corbus, O'Connor, Lincoln and Gardener,¹⁰ but placed the patients whose fields caused us alarm in the hydrotherapy department. Here they were given daily cabinet sweats, salines were used and strychnine was given hypodermatically in increasing doses. These patients were not taken off treatment but the dosage was reduced from 3 gms to 2 gms. None of the individuals complained of failing vision, although we depended more on the findings in the fields because of the unreliability of the patients. In spite of this method of dehydration with two exceptions the patients gained in weight. Some of the fields reduced alarmingly but became stationary when good elimination was established and most of them returned to or almost to their original condition. No changes were noted in the blind spot.

One hundred and eight patients were originally selected as most favorable for treatment. As it is a rule in the Illinois State Hospitals that permission must be obtained from a responsible party to subject the patient to any treatment other than the routine procedure, our class was cut to 36 for the course in tryparsamide treatment. The remainder were reserved for controls. It was the intention originally to divide the remaining class and give the more suitable a course of neoarsphenamine. On account of a misunderstanding this was abandoned and the entire remaining group reserved as controls without treatment. Later we may be able to run a class of neoarsphenamines. Of the 36 in the class treated with tryparsamide three died during the course of the treatment, but their deaths were typical parietic seizures and could not in any way be attributed to the treatment. Of the remaining 33, 22 fields were observed; 11 during the course would not give enough cooperation at any time to obtain a field. One of these patients was so unruly that we could not even observe his fundus with the ophthalmoscope. Of the 22 fields observed during the course of treatment five showed

fields reduced at the end of the first course or approximately 23%. Twelve showed increase in the fields while five showed fields about the same. In other words, 77% showed either increase or no defect. In the patients used as controls and under no treatment 62% showed decrease in fields in the same period of time. Of course, some of these findings can be attributed to the remissions and exacerbations that are common to general paralysis, but it would be unusual to find the same uniformity of remissions in the same period of time. Of the five that showed a final decrease in the fields three showed a decrease at the end of the second treatment; two showed fields the same. Of the twelve that showed an increase at the end of the course, six showed a decrease at the end of the second injection, three the same and three an increase. One did not respond to the first two fields but his third showed contraction and his fourth a decrease, so we classified him with the decrease, although his mental condition was so markedly improved that we had perfect cooperation throughout the remaining of the course. Two did not show any decrease until after the third injection. Two did not show any decrease until after the sixth injection. One did not show any decrease until after the eighth injection. One did not show any decrease until after the tenth injection. Four showed increase without any previous reduction after the third injection, while two showed increase without any previous reduction after the fourth injection.

It has been the experience of most of the ophthalmologists who were called in consultation during the experimental period of tryparsamide study that there is very little change in the fundus. However, this has not been borne out in the experiments conducted on animals. Many of the animals suffered papilo-edema and optic atrophy. In only two cases did we observe any papilo-edema at the Kankakee Hospital and in one of the cases the condition preceded the patient's death by two days. His general condition was alarming at the time of the last fundus examination. He died in a typical paralysis seizure. We could not attribute this papilo-edema to the treatment, although the point is debatable. Very many of the patients have opacities of the vitreous which may have disguised and covered up the fine edema that Woods¹¹ mentions. However, none of the pa

tients with opacities of the vitreous suffered any more loss of vision or fields than we expected.

We were able to keep all but one patient on the treatment by reducing the dosage and dehydration when the fields became grave. One patient, a 33-year-old doubtful parietic, although his physical and mental condition improved, lost fields rapidly in spite of strenuous elimination and we finally took him off treatment but continued the dehydration. His fields are now slowly improving. It has been the experience at the Kankakee Hospital that the younger the general parietic the more rapidly does he deteriorate. Such may be the case here.

Tryparsamide treatment is to be continued at the State hospital. More patients are to be admitted to treatment in the near future, and a control of neo-arsphenamine instituted. I have no authority to speak of the neurological findings other than that they appear promising.

Our conclusions are that tryparsamide may be given in neurosyphilis with safety to the optic tract providing the patient is closely observed by the ophthalmologist.

The ophthalmoscope, either the white light or the so-called red free light, does not give us much information and can not be entirely depended on.

The findings in the fields are perhaps the most important data in guiding the ophthalmologist.

Some patients on account of the lack of elimination may get a cumulative effect. Beneficial results may be obtained by reducing the dosage or discontinuing treatment and dehydrating the patient.

That it is hazardous to treat patients whose deterioration is such that they will not cooperate enough to allow the ophthalmologist to obtain routine fields.

The field chart is appended.

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DISCUSSION

DR. READ, Kankakee: My excuse for addressing this section is the fact that I have had to do with tryparsamide therapy for some time at another of our state institutions. I have enjoyed his paper very much and am only sorry there weren't more present to hear it. Doubtless it will be widely read and appreciated, because tryparsamide has been re-

--decrease: (+)increase:		(o)same:	(g)greatly:	(s)slightly:						
Patient	Before	2	3	4	5	6	7	8	10	Final
1	R. contracted	—	o		+	—	o	+		o
	L. contracted	—	o		+	—	o	+		
2	R. contracted	—	o	o	g	+	s	s	+	+
	L. Small	—	o	o	g	+	s	s	+	
3	R. contracted	o	o	s	—	+	+	—	—	o
	L. contracted	o	o	s	—	+	+	—	—	
4	R. Fair	o	—	—	o	—	—	o	o	—
	L. Fair	o	—	—	o	—	—	o	o	
5	R. Fair	—	—	—	+	+	o	+	+	o
	L. Fair	—	—	—	+	+	o	+	+	
6	R. contracted	—	+	+	o	+	+	o		+
	L. contracted	—	+	+	+	+	+	o		
7	R. contracted	o	o	+	+	+	+	o	+	+
	L. contracted	o	o	+	+	+	+	o	+	
8	R. contracted	—	—	o	+	—	o	o	off treatment 100 cc NaCl intravenously	
	L. contracted	—	—	o	+	—	o	o		
9	R. glass									
	L. no response	—	o	o	+	+	+	o	+	—
10	R. contracted	—	+	—	+	o	+	o	o	+
	L. contracted	—	+	—	+	o	+	o	o	
11	R. contracted	+	—	o	+	+	+	o	+	+
	L. contracted	+	—	o	+	+	+	o	+	
12	R. fair	—	—	o	o	o	o	o	+	o
	L. contracted	o	o	o	o	—	o	o	+	
Cataracts both eyes.										
13	R. very cont.	+	o		+	—	+	o		+
	L. very cont.	+	o		+	—	+	o		
14	R. Good	g	—	o	+	+	+	o	—	—
	L. Good	—	—	o	+	+	+	o	—	
15	R. contracted	—	o	o	+	o	—	+	o	—
	L. contracted	—	o	o	+	o	—	+	o	
17	R. contracted	—	—	+	+	o	o	+	+	+
	L. contracted	—	—	+	+	o	o	+	+	
16	R. contracted	—	o	o	g	+	+	+	o	+
	L. contracted	—	o	o	g	+	+	+	o	—
18	R. markedly	o	+	+	+	+	—	o		+
	L. contracted	o	+	+	+	+	—	o		
19	R. no response	..	cont	—	+	+	+	—		o
	L. no response	..	cont	—	+	+	+	—		
20	R. contracted	+	+	+	+	+	+	o		+
	L. contracted	+	+	+	+	+	+	o		
21	R. contracted	—	o	o	—	o	o	—	o	—
	L. contracted	—	o	o	—	o	o	—	o	
22	R.G.contracted	—	o	+	+		o	o		+
	L.G.contracted	—	o	+	+		o	o		

leased now to the general profession. Ophthalmologists must cooperate with the physicians who use it, or we are going to have had results.

At the Elgin State Hospital we have treated over fifty cases of paresis with tryparsamide, some of them receiving eight doses, some sixteen and some twenty-four. An ophthalmologist did our examinations but did not take the fields relying upon a fundus examination. During treatment he weeded out between fifteen and twenty per cent., because he thought he detected changes that contraindicated treatment. We were playing safe, since we could only secure his services at the beginning of the courses of treatment and at the end of them. Thus many cases were eliminated that Dr. Roth doubt-

less would have continued to treat when he knew that he could see them each week.

We had one go blind that before treatment had enough vision to see his way about; tubular vision. There were just a few active fibers and something happened to them. This was regrettable. Several had a normal fundus at the beginning, but eventually showed a cloudiness of the disk. Some of these have improved after being taken off of tryparsamide; some have remained stationary. None have lost their vision.

The determination of the field of vision is, of course, a very helpful procedure. My only question in connection with this procedure is, does the patient cooperate at all times? We must remember we are dealing with a more or less demented patient and hence may get false fields. I have noticed running over these fields of the essayist that some of them vary from tubal vision up to a field that is perhaps one-fourth to one-third of the normal area. From time to time the field seems to recede and enlarge and then recede again. Now, are these variations due entirely to the treatment or to a difference in the cooperation of the patient at various times?

In cases in general practice you would probably have much better cooperation, when your patient is not so demented. I have heard it said by good ophthalmologists that tryparsamide is no more toxic to the optic nerve than other arsenical compounds, but from my personal experience I hesitate to accept that statement. I certainly would not like to see syphilis treated with tryparsamide without the assistance of the ophthalmologist.

The injury to the nerve, we find, generally occurs in the first course of treatment. That is, our patients who went through the first course without injury to the nerve went through two or three more courses all right.

The first two or three doses are the most critical ones, as is true, of course, of neo-arsphenamine as used in general practice.

I have been much interested in the doctor's paper. It is a very constructive piece of work. And, if we are to go on with the tryparsamide treatment, I believe the final conclusion will be that we must watch that optic nerve while using this drug.

DR. D. J. EVANS, Aurora: I would like to ask Dr. Roth the relationship of the Wassermann blood examination and the spinal fluid examination. That is, the comparison in results of the two examinations.

DR. L. A. SHULTZ, Rockford: Apparently there is considerable risk to the vision. I would like to ask whether there is enough value in the treatment to warrant this great risk. Has it been used long enough to determine what the end results are?

The paper does not cover these phases.

DR. ROTH, in response: It is hard to get the cooperation of the patient in general parietic cases; in fact, of any neurosyphilide. They are unreliable in every way. Even in taking the routine field, you will find the same patient varying. Patients sup-

posed to retain all their mental faculties also show a variation from time to time in the field. So far as the fields are concerned, it is only in a general way that they are bad. A slight deterioration, or a slight increase or slight decrease in the field we can discount on account of the unreliability of the patient. If it keeps on decreasing, it is best then to resort to other means, to decrease your dosage, stop your treatment and by all means dehydrate the patient.

There is a liability of injury to the optic tract, as Dr. Reid has mentioned. Any drug that has the penetrative ability to reach not only the parenchymatous but the interstitial tissue of the brain substance is going to affect the optic nerve. It is bound to. I find that the same thing that practically affects the brain tissue may cause a choked disc. You can look for it.

As to the question of Dr. Evans, I am not a laboratory man. I am afraid Dr. Reid will have to answer that question. I don't know enough about it.

Does the treatment do enough good to warrant the danger of injury to the optic tract? That has been worked out in the Rockefeller Institute by Dr. Pierce and Dr. Brown for a number of years and the work was carried on also by Dr. Allen Wood and Dr. Moore at the University of Pennsylvania and by Cady and somebody else at the University of St. Louis, and this drug was not released for the general practice until the investigators were reasonably sure that this could be controlled by the ophthalmologists.

As far as the treatment is concerned and the good it does the patient, nearly all of the patients at the Kankakee Hospital were in a cachectic state, many of them were untidy, some of them you couldn't even get the cooperation to take the field, much less the fundus. The first fundus examination was very, very difficult. But these patients became so that they would absolutely cooperate with us. We could examine their fundus without any difficulty, and they put on all the way from 10 to 50 pounds in weight. Some of the men you wouldn't know at the end of ten weeks. They were men who were first kept under surveillance, but when nice warm days came on were allowed to go out, and some of them even went to work.

For the general parietic, in the cachectic stage, the man who was almost untidy, to redeem that much of his mental and physical being, I think it worth while.

INSTITUTIONALIZATION OF THE PRACTICE OF MEDICINE*

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CHICAGO

That there is an unmistakable trend toward the institutionalization of the practice of medicine is apparent to all who have observed recent

*Presidential Address before the Annual Meeting of the Chicago Dermatological Society, January 21, 1935.

developments. Patients in large numbers are already seeking the institution rather than the individual for diagnosis and treatment. This is due to a variety of factors, chief among which has been the enormous success of the great clinic in the northwest which paved the way for the organization elsewhere of many similar institutions on a smaller scale. A patient goes to this clinic not knowing, as a rule, nor apparently caring who the physician in charge of his case may be. He goes there, as he says, "to get to the bottom of his case," and he may leave the clinic unable to recall the names of more than one or possibly two of the physicians he has seen. The psychologic effect on the patient of running him through the mill is very great, even though, as conceivably might happen, the clinical judgment used in the interpretation of the results of the various tests has not been extraordinary. Another factor is the large increase in and the rapid shifting of our population. People of limited means drifting from distant towns to the large cities are at loss to find an individual physician and hence they go to the hospitals, or other institutions, if not as patients at least to be referred to someone for treatment. Moreover, the wide dissemination of the scientific facts of medicine by the press, by lectures and recently even by radio has given people the desire to avail themselves of the clinical diagnostic methods which they expect to find only in large institutions.

There is now in process of organization in Chicago an institution primarily designed to take care of this class of people. It is to be known as a diagnostic clinic and its object is to put at the disposal of both laymen and physicians every facility for diagnosis. Once the diagnosis is established, the patient may elect to remain at the institution for operation or treatment, or to return to his own physician. I am told that the idea of creating such an institution developed from the tremendous demand for information coming into a certain bureau which broadcasts talks on health subjects. No advertising will be done but publicity, of course, is necessary and will be easily secured in other ways.

One of America's richest citizens has dropped into the lap of Detroit an institution which is a logical development of a machine-age. Intended, no doubt, as a great benefaction to the city, it

has become a problem to the medical men of Detroit and probably something of a surprise to its creator. No expense either in building or equipment was spared and it was probably firmly believed by the owner that the staff was of secondary importance. Just as "men, not stones, make a university," so does a staff, not equipment, make a hospital.

In this machine age not only the layman but, unfortunately, all too many physicians as well have been led into a blind faith in laboratory diagnostic tests. The tremendous value of physical examination and clinical judgment has been forgotten. Thousands of patients are daily being treated for syphilis who have never even been exposed to the infection merely because a laboratory has returned a report of a one plus Wassermann test. Some physicians are allowing their clinical judgment and their powers of observation to atrophy from disuse, and are glorifying laboratory methods to a degree little short of the absurd. Not infrequently when all the results of the numerous and complicated tests carried out for a given patient are gathered together the physician is not only not aided in arriving at a diagnosis but is led astray. I know of a young woman who was subjected to all the laboratory tests available at that time because of a recurrent dermatitis on the upper lip. It remained, however, for another observer to arrive at a correct diagnosis in a few minutes by doing some straight thinking instead of complicated laboratory tests, and by charging the patient with the use of a depilatory, to which she confessed, much to the amazement of her over-fond mother.

An extraordinary situation exists today in America and one which could exist in no country other than this land of contradictions and extremes. We have on the one hand a large body of the population with implicit faith in machine-medicine and efficiency experts, and on the other an equally large number of Christian Scientists who can dispose of a "claim" or "demonstrate" an increase in salary merely by denying the former or thinking hard about the latter. No laboratory apparatus, no guinea pigs, no test tubes, no laying on of hands—not even is it necessary to visit the patient. The treatment can be carried on while the practitioner sits at home toasting his shins by the fire.

In no department of medicine is the institution assuming more importance than in the field

of venereal disease. The Federal Government, the State, the County, the City and privately organized clinics are all actively engaged either in the diagnosis or treatment, or both, of venereal disease. The late war with its widespread dissemination of antivenereal propaganda, and the army methods of prophylaxis and treatment have been largely responsible for this development.

In Chicago we have seen the organization and growth of the largest clinic for the management of venereal disease in this country. It was the direct outgrowth of the war and was organized by public spirited citizens of a high type, who have, perhaps, been misguided in their zeal, but who have nevertheless been honest in their convictions. These men, some of whom saw hard service overseas, were imbued with the desire to do something big to prevent the spread and the ravage of venereal disease. The names of these men always appear prominently in the full page advertisements in the daily press, and in the language of the business world these men live in, the names "sell the idea." The name of the institute was so cleverly chosen that almost every layman I have ever talked with about it has had the impression that it was either a Federal or Municipal institution. Even the students and the assistants at the Central Free Dispensary are constantly writing into the records that the patient has been previously treated at the Health Department, assuming that this institution was the City Health Department. The impression in the minds of the unthinking has been further strengthened recently by the Institute playing up the booklet on venereal disease published by the city, so wording the advertisements that it would be necessary to know the facts, or else be a careful reader to understand the situation.

The effectiveness of the name is proved by the fact that patients come to the institute from all of the surrounding middle western states for cutaneous diseases. These patients are impressed by the name and have confidence in the institution because they think it is a Federal organization. They are able to travel and therefore able to pay a reasonable fee. They are brought to the clinic solely by the combination of a misleading name and constant advertising.

The appeal of the advertising is based on the element of fear. The harm done by instilling fear into the minds of innocent people is very

great and probably outweighs the good accomplished by trying to frighten indifferent people into taking treatment. This advertising is creating syphilophobes by the hundreds and many homes are being ruined for no better reason than that the wife is convinced by the fear-inspiring page of advertising that the husband has syphilis because of the presence of acne vulgaris, rosacea, a boil or a leg ulcer.

It is not my purpose here to enter into details, to cite cases or to rail at this institute. Rather it is my purpose to call to your attention the trend indicated by the successful operation of this institute for five years: to warn you that probably very soon similar institutes will be organized in all of the big cities, and to inquire into the reason for this trend.

What does this trend indicate? Does it mean that the time-honored intimate relation existing between physician and patient is wrong? Does it mean that the introduction of department store methods into medicine is necessary for the good of mankind? Does it mean that we as syphilographers and dermatologists have failed in our duty to our patients by giving them improper treatment, by neglecting the personal side, or by overcharging them? Is there a real need for such radical changes? What should be done? What can be done? Must we accept the trend as inevitable, fall in line, become the head of an institute and have our names appear daily in the advertising as the directors, or shall we rise against it and smite it with the might of medical organization?

The value of the personal contact between patient and physician cannot be overestimated. We hear much these days about the specialists driving the family doctor out of existence and the impression seems to prevail that there can be no close personal contact between patient and specialist. This certainly does not hold true in our specialty for who could have more occasion to see his patients from year to year than we have to see our psoriatics, our eczemas, our dermatitis herpetiformis cases and our syphilitics? Could these cases be better managed by a fliver factory institute running them through by the hundreds? This country is becoming organization-efficiency mad. It is being Henry Forded to the point of absurdity. We have quantity production of ready-made clothing, breakfast food, education, ideas, religion and propa-

ganda of every conceivable kind. It is an almost universal belief that anything can be accomplished by first forming an organization, getting a board of directors, a few young executives, monumental filing cabinets, an efficiency expert or two and then going into conference with locked doors.

The syphilographers and dermatologists, I am convinced, have been doing their duty. I have been taking detailed histories both in public and private practice for years and I have yet to learn of a patient who was taken advantage of or overcharged because he had a venereal disease. In our office cases we have frequently charged less and failed to collect even half of the amount paid in cash to this institute for a year's treatment. It has been almost a daily occurrence for patients to enter the syphilitic clinic at Central Free Dispensary after having paid their hundred to an institute, finished their year, still in need of treatment but with no money remaining. It then becomes our job to carry on the management of the case. The policy of this institute, in this respect at least, has been about as high-minded and socially advanced as a cash-and-carry, a Piggly-Wiggly or a one arm restaurant. There are unscrupulous men in the practice of medicine and there always will be a few who take advantage of human infirmities, but this does not justify the formation of such an organization which turns upside down the treatment of disease, and takes patients such as the fireman, the brick mason and the laborer from our younger men who are eager and willing, and more capable, to treat them for the same or less fees than those charged by this supposedly highly altruistic institute.

What, then, was the real need for the organization of this institute? There have been well organized clinics, manned by trained men, in our medical schools for years. We have struggled along without funds and without even moral support from the layman, unadvertised, and unsung. Did the directors of this institute offer to lavish large sums of money on these clinics before forming their organization? They did not because they had probably never heard of such clinics. They easily made up their minds that they were doing a big thing in a big way because, knowing little or nothing about the situation, they had little in the way of minds to make up.

It seems to me that a very important function of this organization is to supply a nice warm glow to the egos of the directors.

Now what can be done? The possibility of treating with the directors of this institute has been abandoned. Being so-called hard-headed business men, they have turned otosclerotic ears to the committees appointed to meet with them, and are not to be swayed from their high-minded, and I might add, high-handed course.

There is no law of this state whereby this institutional practice of medicine can be stopped. Inasmuch as advertising is the sole basis on which this type of institution can continue to exist, the obvious course of procedure would seem to be to attempt to change the laws and our ethics in such a manner as either to prevent advertising by institutions or to allow advertising by individuals. An individual may not advertise. He must depend for patients upon his skill and his reputation. Why should an institution having no one of reputation and no one of unusual ability be allowed to advertise and thereby attract and treat a thousand patients daily?

This institutional trend is a very real problem. It is a much more serious and a more imminent problem to the genito-urinary specialist and to the syphilographer than is state medicine to the profession of medicine as a whole. We must decide very soon what our attitude is going to be. If we choose to oppose it, in doing so we must ask ourselves if we are reactionary or merely conservative. Few people like to be thought reactionary. It bespeaks lack of vision. Do we lack vision? Are we blind to the future? Is further progress in medicine to be left to the layman and to the efficiency expert?

On the other hand, if we are going to lend our support to the practice of medicine by institutions we must hasten to get into the movement and lead it, because if we do not we shall find ourselves tagging along in the rear ten years from now. If this movement is destined to succeed we must recognize it and gain control at once, or the opportunity will be lost. If we delay the lead will soon pass into the hands of laymen.

Before we take a step one way or the other we must make up our minds whether we wish to retain our individuality or whether we wish

to become cogs in a machine and mill-hands in a flivver factory.

25 East Washington Street.

DISCUSSION

DR. WILLIAM ALLEN PUSEY: I think this paper should not go without an expression of appreciation. The whole problem is exceedingly difficult to handle. Perhaps you know that I am an individualist and strongly opposed to this organization of the practice of medicine. I see no solution for the general problem just now. There is undoubtedly an economic side to the complete care of patients. The patient needs, for the best going over, the attention of a considerable number of experts and if all of the experts charge their usual fee for their services the thorough examination becomes a luxury for all except the rich, or else must be a matter of charity. How that will be handled I do not know. I think we well realize that most men cannot be handled on an ideal basis, that most men cannot have everything they wish handed to them even when they are sick. Take the poor devil who is a native of Africa, for instance; if he succeeds in making his living without being pawed by a lion or infected by the tsetse fly, he has about all that is coming to him. We have the idea that unless every individual has the very best in medicine he has not fair treatment. That is not possible except in endowed institutions, and then only for a few people.

I think the best that can be done for the average man is to give him a good all-round doctor, a doctor who can look after his ordinary diseases and if he happens to fall into a small group of cases that need special attention he can be referred to the man who can take care of him, or be allowed to scratch it out if it is a dermatosis. All mankind cannot be given perfect, ideal attention, and we have to face that. I think there is no doubt that the best way to treat sick people is to have a doctor in charge of them and responsible for the case. The difficulty about an institution is the difficulty about hiring talent of any sort. You cannot give a good concert by sending around to an institution of music and telling them to furnish a band of masters; Paderewskis do not work that way. The great institution that is the prototype of all of the other group clinics is so great that it can pretty nearly do that work. In the earlier days it could not, but now it is so large that it can. The ordinary institute is one where the men are really holding on by their eyelashes, and that is not an institute where patients are served very highly. I think the group clinic will not go indefinitely. I think that only institutions where there are men of outstanding capacity to direct them will last for long. The men around the hospital are different. That is group practice, and the best we have. The objection I have to a hospital is that the physicians do not as a rule have enough authority. I hope to see a hospital where the medical staff will have something to say concerning its operation. The problem of the

Public Health Institute would take so long to talk about that I had better quit.

DR. ANDREW P. BIDDLE, Detroit: In the first place, I wish to give voice to my satisfaction and pleasure that we are bringing up in a Dermatological Society problems which are of interest to the dermatologist outside of the mere problem of disease. I have always felt that when we are gathered together we should discuss just such problems as Dr. Mitchell has brought up. In Michigan the situation is difficult, and in Detroit it is acute. We have a venereal clinic there under the Detroit Board of Health which passes judgment every day on some 700 cases of syphilis and gonorrhea. It is claimed that there are, given anywhere from 300 to 350 injections for syphilis a day and that many other cases are treated. We believe that the propaganda promulgated by Boards of Health is proper, if they will recognize their limitations. They claim the right to treat venereal diseases on the ground that it is in the interest of the prevention of disease. We have not been able to combat this argument, but the profession as a whole realizes that, if this right is acknowledged, it may be but a short step to the acceptance in principle of what is generally known as State Medicine, which we would all deplore in the interest of both the patient and the profession. We have this discussion coming up in the Legislature year after year and, as soon as we gather our forces and down it, it bobs up again. As Dr. Pusey says, the condition described by Dr. Mitchell is due to the fact that the patients referred to in his address should receive the best attention at a minimum price, which under the present medical, sociological state they do not. As a student of medical history, I am firmly of the belief that we had best often recognize existing conditions; that it is well not always to combat them and change them by force; but that we should so conduct ourselves that these people anxious for changes and desirous of helping may see the light as we see it and conform to the experience, practices and desires of the medical profession.

DR. HAROLD N. COLE, Cleveland, Ohio: I think this is a very timely subject and something that interests all of us in medicine. Nearly every community notices this in some form or other today. Just how it will turn out, I do not know. I was talking with Dr. Wende about it last fall and he thought this was just a passing fad, that it will go on for a little while, but will not last very long. It has been tried in several places and been a failure. He said he understood that in some cities it has done well, in Toronto it has done well, but in most places the institution is grouped around one or two men and as soon as they are gone it will go by the board. There is one thing we must remember, however. I wonder if there is something wrong with our profession and there is a demand for a change? Perhaps there is something really wrong and the public will get what they want sooner or later. Perhaps we need to do something. Perhaps we are not educating our medical students properly and not getting the right idea. Perhaps we are too mer-

cenary and not going into medicine with the same outlook we used to have. I think it behooves the medical societies to get closer together and look out for themselves. In Cleveland we charge \$35.00 a year for membership in the society. You remember the saying, "Where your treasure is there will your heart be also," and we are all much interested in what is going on. We have a highly paid publicity expert and he is on his toes and is looking out for what the profession is doing. He sees that everything of importance that the medical profession does is in the papers. I think we must do more of that—we must look out for ourselves. Hygeia is a good example of that kind of thing. If those things are good they will stay, if the public want them they will stay, but if not they will lose out.

DR. RICHARD L. SUTTON, Kansas City, Mo.: I am very much interested in this subject, but I believe the matter to be one in which the common sense of the general public will ultimately triumph. In England there was much worry regarding the possible evil effects of a Socialist cabinet. You can now see what happened to that ministry. In America we were upset because of the candidacy of La Follette and his brother "pinks." You can now see where they landed.

The good sense of the public will win out in the present instance. People know when they are getting highly specialized, individual medical attention, and they know when they are being run through a machine. Few of the self respecting ones will stand for the latter method of treatment. They might in a "Kranken Casse," but not in the United States of America.

I feel that in many respects it is a question of service salesmanship. When our patrons realize that we are giving them high grade, individualized medical service, with a conscience behind it, few of them will resort to a cut-rate public clinic, no matter how widely it may be advertised, or whose names may be fluttering at the mast head as a decoy.

FEEDING THE NORMAL INFANT*

F. EMERSON INKS, A. B., M. D.
PRINCETON, ILL.

The conservation of child life is a movement which has actively inspired the whole country. Prenatal care and child welfare are being written into the laws of our land, but we hear very little from either physician or so-called welfare worker about one of the most essential points of the child's entire life, that is, the diet during the first year, and more especially the first six weeks, the most important period in the child's dietetic history.

The lives of many infants would be saved every year if the physician would take as much interest in the new born infant as he does in the mother, or as he does when later he is called to see the sick baby.

Pritchard wrote in 1922: "If all infants were breast fed, and properly breast fed, our Infant Welfare Centers and Infant Consultations might close their doors, for there would be very little work for them to do; but, thanks to the various counter-attractions, and thanks also to the ignorance of doctors, nurses and lay public with respect to details in the management of breast feeding, an enormous number of infants are relegated to the bottle who, with a little resourcefulness and knowledge could perfectly well be saved this ignominious and dangerous substitution; hence our high infant mortality rate and the need for welfare centers, not so much to supply dried milk and other substitutes as to maintain and proclaim our original slogan, 'Back to the Breast.'"

All are agreed that breast feeding is best for the large majority of infants, and most pediatricians believe that 95 per cent of mothers could and would nurse their babies if properly instructed, but many physicians are contented to leave the feeding problem in the hands of some neighbor woman or other ignorant person.

Because of this condition of affairs, I wish to present this paper, which will contain nothing new, but only a review of a successful routine for breast feeding.

Feeding the Newborn—There is some difference of opinion as to when the newborn should first be put to the breast.

Investigation seems to show that:

1. The glycogen available in the newborn infant does not last beyond 24 hours.
2. Colostrum has a high caloric value, but is relatively scarce.
3. Colostrum contains euglobulin, which is the only protein absent in the fetal blood.
4. Antibodies may be contained in euglobulin.
5. Hemolysins and bacteriolysins are thought to be transmitted by colostrum.
6. Colostrum is a mild laxative.
7. Colostrum prepares the organism for ingestion of milk.

For the above reasons particularly, the newborn infant should be put to the breast at the end of six hours, and every six hours until a secre-

*Read before the Section on Medicine, Illinois State Medical Society, Quincy, May 20, 1925.

tion of milk is started, when a four hour interval with five feedings per day should be used.

Both breasts should be emptied by the infant, or by manual expression, at each nursing, and, if the baby is small and seems undernourished, it is well to add complimentary feedings of a boiled milk-water-sugar formula after each nursing, until the breast is sufficient to supply the needs of the child.

The newborn should receive a minimum of twelve ounces of fluid the first twenty-four hours, and, if the breast and the complimentary feedings do not supply this amount, boiled water should be given in sufficient quantity.

If this routine is carried out, the initial loss will be lessened or entirely eliminated, and the so-called inanition fever of the newborn will be largely a thing of the past.

Occasionally there will be found an infant that is too weak or too lazy to nurse, in which case the colostrum can be expressed from the breast and given with the complimentary feedings by a medicine dropper, or from a bottle, but above all get the baby to take twelve ounces of fluid every twenty-four hours.

Technic of Breast Feeding.—During the nursing period, both mother and child should be in the most comfortable position possible, so each may attend strictly to the job at hand. The breast should be held away from the baby's nostrils so as not to interfere with breathing, and all distracting influences removed so that the infant can give its whole attention to nursing.

The child should be fed regularly at definite intervals, the four hour interval with five feedings a day probably being the best if the minimum gain is continued. If, however, the weight curve does not continue upward at the rate of from four to six ounces per week, the three hour interval with six feedings a day should be used.

A robust, healthy infant that is gaining normally should be kept at the breast as long as it continues to suck and swallow, which is usually about fifteen minutes. With the weak or undernourished baby the time required for nursing will be longer, as it has to stop and rest frequently, for the act of sucking is hard, as anyone who has taken the trouble to watch will agree. The baby should not be allowed to sleep for any length of time at the breast. If it cannot get sufficient food in twenty-five minutes the milk should be

expressed directly into the mouth, or into a clean container, and given from the bottle.

The breasts should be rotated at nursing, unless it becomes necessary to use both breasts at each feeding, when the breast to be used first should be rotated, and each breast completely emptied manually, after nursing.

The breasts should be cleansed with soap and water, and rinsed with clear water before and after nursing, but the baby's mouth should be left strictly alone, or more harm than good may result from attempting to cleanse it manually.

If the nipples become sore and too painful to nurse, do not use the nipple shield or breast pump, but empty the breasts manually. This can be done easily and quickly after a little practice. Place the ball of the thumb on the upper surface of the breast at the free edge of the areola, with the breast resting upon the fingers and the ball of the index finger at the free edge of the areola posteriorly. Approximate the thumb and forefinger, applying gentle pressure to the breast, and at the same time pull forward and outward. The milk can thus be expressed without pain or discomfort.

Conserving and Increasing Quantity of Breast Milk.—The opinion is practically unanimous that regardless of the exact physiological manner in which lactation begins, it depends, for its continuance, upon the act of sucking. Repeated and systematic analysis of breast milk shows that the quality is rarely at fault but, because of inadequate stimulation, the quantity is frequently diminished. For the greatest success in breast feeding there should be a regular and complete emptying of the breasts, both breasts at each feeding if necessary. There are times when the infant does not empty the breast completely, and if these times become numerous, and the milk is inadequate, the breasts should be emptied manually after each nursing. Absolute regularity of feeding gives the breasts the education necessary. Empty the breast entirely and it fills again, as it were, to the same level and beyond; if not emptied the milk falls off in quantity and quality. Chemical analysis of the milk is ordinarily of little value, unless it be to satisfy the mother, for it varies from day to day, and from nursing to nursing, as well as during individual nursings.

The quantity, but not the quality of the milk can be influenced by the diet, although it is not possible to draw absolute conclusions. The food

should be general, and such as the mother has been accustomed to, with a tendency to a high protein intake, but not pushed to the point of gastric upset. The fluid intake should be increased if possible, with at least a quart of water per day, and the same amount of milk, if it does not interfere with the appetite. It is well to take the water half an hour before nursing periods.

Although the regular and complete emptying of the breasts is the most important factor in nursing, the environment and mental attitude of the mother influences to some extent the milk supply. A hopeful and determined point of view on the part of the mother will help to conserve the secretion of the milk.

It is well worth the time spent on the part of the physician in explaining to the mother the necessity of her nursing her baby, and in suggesting little details that will make nursing easier and more successful. Definite instructions should be written and explained to the mother until she thoroughly understands what she is to do. When the doctor has won her entire confidence and co-operation he has won half the battle, and there is no better way of achieving this than by showing her that he is interested in her problem. Have her report regularly and impress upon her the importance of routine even to the formation of habits.

Contraindications to Breast Feeding—The usual reasons advanced for failure to nurse are generally invalid. Breast feeding, if properly managed is seldom harmful even to delicate mothers, and may even be beneficial. Active pulmonary tuberculosis constitutes the only positive contraindication to breast feeding. However, if the lesion is healed, there may be no objection to nursing the infant for the first few weeks at least.

As to epilepsy and insanity, they in themselves are no contraindications unless there is danger to the infant or injury during nursing. If there is someone to watch during this period the baby should be kept on the breast until it gets a good start.

In cases of malignancy, severe anemia, goiter or cardiac decompensation, each must be considered as an individual problem.

If syphilis has been acquired after the birth of the baby it is a contraindication, otherwise not.

In acute mastitis it may be necessary to stop

the breast feeding temporarily and empty the breast manually.

In acute infections, it is probably best for the infant, if it is up to weight, to omit the breast feeding temporarily and feed, especially in the case of pertussis or measles.

Pregnancy and the beginning of menstruation are not causes for weaning early.

Mixed Feeding—The weight curve is the indicator of the success or failure of any method of feeding. If the infant is making a minimum gain of four ounces a week, the feeding is successful, regardless of crying, colic or character of bowel movements, and should be continued unless it is certain that a much better method can be used.

If, however, the weight is not increasing as it should on the breast, and the amount of breast milk cannot be increased, or for some reason it becomes necessary to rest the breasts, complimentary feeding should be instituted.

A boiled milk-water-sugar mixture of a fair concentration should be used. It should be understood, however, that the breasts should be emptied first. Following each regular feeding a small amount of the milk formula may be given until the child makes the necessary gain. The amount probably will vary at each feeding, and each child will require different amounts. As the breast milk increases or decreases the amount of complimentary feeding will decrease or increase, but usually from the sixth month on the amount is gradually increased.

If care is not taken, a child will quickly learn that it is easier to nurse from the bottle than from the breast, so it is best that the complimentary feedings be not obtained too easily.

Complimentary feeding then, means that at each regular feeding the child is put to both breasts and is encouraged to nurse, and is then immediately given from a bottle sufficient milk mixture to satisfy its requirements, while the mother's breasts are completely emptied manually.

As to supplemental feeding, it is unwise unless there is sufficient or an excess of breast milk, when it may be used occasionally to allow the mother to get away from home, or in cases where weaning is being started.

If the breast feeding is sufficient, and there is no need for regular complimentary feeding, an occasional feeding should be started during the third or fourth month so the baby may become

accustomed to this method, which may have to be used in emergencies.

It is comparatively easy to train children before the end of the third month, but later it is somewhat of a task. For this reason it is well to start giving cod liver in small doses at this time, even in breast fed babies.

About the end of the second month, or the beginning of the third month, a little orange juice should be given once a day, between nursings, starting with one-half a teaspoonful and gradually increasing until the juice from a fair-sized orange is given. The orange juice may be alternated with the same amount of strained tomato juice.

At the fifth month a teaspoonful of well-cooked cereal with a little milk and sugar added may accompany the mid-forenoon feeding and, if well borne, can later be given at the six P. M. meal. The amount may gradually be increased until at the end of the year four or five table-spoonfuls may be given. Cracker and dry bread may also be given now.

During the sixth or seventh months an ounce or two of a vegetable puree may be given at the two P. M. feeding and the amount increased rather rapidly to four or five ounces at a feeding. About this time thickened milk gravy may be given with a little baked potato or bread crumbs. Well cooked bacon may be added in small amounts.

During the ninth month, rice, bread or tapioca puddings may be given in small amounts, and cooked vegetables, such as carrots, spinach, potato or parsnips may form a separate dish, as well as small amounts stewed fruits.

During this time the amount of breast milk has been decreasing and the amount of cow's milk has increased, until by the end of the first year the child will have gradually weaned itself, and is taking from a pint to a quart of milk, never more, in four feedings a day, following a diet which may include well cooked and finely divided vegetables, thoroughly cooked cereals, broths, puddings, dry breads and toast with butter, crackers, a little finely divided meat and well cooked bacon, cooked fruits and occasionally a little scraped raw apple.

The various articles and quantities given daily will depend upon the weight curve, care being taken not to overfeed.

Egg should be added slowly, as it of all foods

is the most likely to cause an anaphylaxis. It may be given in drop quantities in the milk, and gradually increased if no reaction follows, and given as a separate dish during the sixth and seventh months.

Of course, it is understood that only one new article of diet is to be added at a time, and that only after the child has become accustomed to the one preceding.

If such a schedule has been carefully carried out the child will have weaned itself by the end of the first year without the usual attendant difficulties, and the mother will also be spared much annoyance and distress.

In closing I wish to emphasize that:

1. Each child be considered as an individual for which a definite routine should be worked out, and not a nonentity to be fitted into some scheme of feeding.
2. Regular complete emptying of the breasts is the best means by which to increase the supply of milk.
3. The weight curve should be the guide as to the success or failure of the diet.
4. Weaning should be a gradual process.
5. By all means secure the confidence and co-operation of the mother.

DISCUSSION

Dr. J. C. Krafft, Chicago: It is a timely subject well given. It is a fad much used just now but seldom indicated.

I would like to hear from the essayist as to how many of these children who have supplementary feeding the first few weeks become weaned after two months or three months. I would advise using supplementary feeding only in those cases where there is more than one-tenth loss in body weight.

Four-hour intervals of feeding is a mooted question. Any child under weight will not do well on four-hour feedings. It is only the fat child that does well. Nor will a child ever keep on nursing very long when you use both breasts at one feeding. I know of no case where the child has nursed over two months where you have used both breasts at each feeding.

The cattle raisers in Missouri have tested that very minutely. In animal life nursing is not continued very long when used at such frequent intervals.

I would also say, never let a child nurse from a tubercular mother, whether the lesion be open or closed. We have a few records at the tuberculosis sanitarium that bear us out very well on that. Holt cites a case where a child was in contact with a tubercular member of the family for twenty minutes or half an hour and was dead within eleven weeks from tuberculosis. Never let a child nurse from a tubercular mother

whether the lesion be active or whether they are closed lesions.

I enjoyed the Doctor's paper. There will always be differences of opinion on the details of it. On the whole, it is a very interesting paper.

Dr. F. H. Renberg, Chicago: Mr. Chairman, I would like to add a word. In listening to Dr. Inks' discussion or paper where he refers to the doctor being derelict in not instructing the mother in the nursing care and feeding of babies, I wonder whether it may not be just as important for the doctors to see that there are not quite as many births.

From my observations, which perhaps are limited, I find in many homes where the mother is ignorant of the proper feeding and care of babies there are too many children. The mother has another baby in fifteen months. She hasn't done very well by the first baby. It doesn't thrive as it should and, lo and behold, there is another on the scene.

It may not be relevant to the question or to the paper, however, it is a factor that appealed to me as dealing with the subject from perhaps another angle. I believe it is a matter that should be considered by physicians in trying to lengthen the birth interval and in that way perhaps better care in regard to the feeding will be given the infant.

Dr. R. O. Hawthorne, Monticello: I would like to ask the doctor who read the paper whether he makes a routine practice to give cod liver oil to every child, or to rachitic children only? This is a heavy oil and is hard to digest. Why take the chance of upsetting the digestion of a child by giving cod liver oil, if they are already doing well and not rachitic?

Dr. F. Emerson Inks (closing): I am glad Dr. Krafft said what he did. That is what I have been trying to preach. Don't treat the babies all alike. That is where a lot of our trouble has been in the past. Somebody has worked out a method of feeding and we feed all the babies that way. What I should like to see done is every baby considered a problem unto itself.

As to Dr. Krafft saying he has never seen a baby who nursed any length of time when both breasts are used at a feeding, I have a girl three years old who nursed from both breasts up until ten months old, until she developed whooping cough and weaned herself gradually.

As I said, the four-hour feeding will not always hold. You have to depend upon your weight curve. That is the whole thing in successful baby feeding. They should be gaining gradually.

With regard to the question of feeding and the frequency of pregnancy, I know of no way to control that. We all appreciate the fact that coming too often is bad. I suppose we should probably fix about every three or four years. My theory would be every well-to-do family should have four at three to four-year intervals. When anybody learns to do that, we will have everybody coming our way.

As regards cod liver oil. Why? Well, one thing is, as I tried to mention, there is a certain period in breast feeding that we don't know about; but I think

the consensus of opinion among those who are working claim that about ninety per cent. of the children have rickets although they are not sick with rickets. I have been trying it out and I have been lucky to get physicians in my town whom I have persuaded to let me train their babies to use cod liver oil.

You will find a half a teaspoon will very seldom upset the stomach. This is more needed in the congested districts than it is in the districts where the children can be out in the open sunlight. It has been conclusively proven that with sunlight and cod liver oil we can cure rickets.

PREVENTIVE SURGERY*

FRANK D. MOORE, M.D., F.A.C.S.

CHICAGO

For some time, now, we have been hearing much of preventive medicine. It is, in fact, generally considered the keynote of modern medical progress. Prophylaxis, prevention—of these we constantly hear much and even the laity can discourse fluently upon the subject. The medicine of today is preventive. Public health and sanitation bureaus, inspection of school-children and of employees of large industrial plants, the campaign for the periodic health-examination, the slogan, "Visit your doctor on your birthday,"—all these are indicative of the trend of general medicine toward prevention as against the old idea that medical science was only to cure the sick.

We hear less of preventive surgery. The phrase, in fact, is unfamiliar to the average physician and is practically unknown to the general public. The analogy, however, is that of parallel themes. We emphasize the preventive in medicine, why not the preventive in surgery? We recognize and the general public is beginning to realize the need for removing foci of infection, such as cause the ordinary ailments. The removal of diseased tonsils to prevent rheumatism and heart disease in childhood, the improvement caused in many children by the removal of adenoid tissue from the naso-pharynx, these are generally accepted facts and the public recognizes the need for these minor operations as a means of prevention as well as a curative measure. In gynecology, too, the repair of lacerations to prevent future prolapse and other pelvic disturbances is a common occurrence. The re-

*Read before the McHenry County Medical Society, Woodstock, Illinois, May 8, 1925.

removal of cancerous lesions in the earliest possible stage are well-known measures of prevention.

What is not so common, however, is preventive surgery in a much wider and more radical sense. If there is to be a wider growth of the field of usefulness for surgery, it may surely be most effective along the lines of true prevention. We are accustomed to the idea of preventive medicine. The expression is fairly old. Preventive surgery is new, but no less important. Internal medicine, as an accurate science, is older than that of surgery, and it is only natural that it should be the first to extend its field of usefulness into that of prophylaxis. In the old days, when asepsis was unknown or at the best uncertain, surgery was not a thing to be undertaken lightly, certainly not a measure to be resorted to for a patient as a protection against future ills. The future was uncertain only in its hazards; the remedy was certain in its risks. Nowadays, of course, with the practical safety of operation, in well-equipped hospitals and in the hands of competent surgeons, this argument has outlived its usefulness. The present remedy of surgery is less hazardous than the risk of future illness. Surgery must always be performed to relieve immediate pain and to save life, but it should aim always not only to do these most necessary things, but even more important still, to prevent the onset of surgical conditions which may be far more serious than the original complaint. In this way only, can it accomplish the most possible for the good of mankind.

One of the broadest fields for prophylaxis in surgery, is that of the prevention of carcinoma by the early recognition and early removal of the so-called pre-cancerous lesions, and this is a field which includes the entire body. Probably one of the best examples of what can be done in the way of prevention is illustrated here in the case of tumors of the mammary glands. Early removal of any persistent lump in the breast and especially radical removal of the whole breast for any lesion in the least suspicious of carcinoma, gives us some of our best results in the line of prophylactic surgery. Chronic cystic mastitis and eczema of the nipple are undoubtedly pre-cancerous lesions, for which radical amputation of the entire organ and its adjacent structures is the surest method of avoiding future trouble. It has been estimated that from

15—50 per cent. of all breasts removed for cystic disease have been found to show pre-cancerous changes or even areas of true carcinoma.

The same general principle holds true in any case of carcinoma of the skin or other easily accessible tissue. While radium and the x-ray are much used in these cases, where surgery is possible, it is a surer means of prophylaxis.

The stomach as a field for surgery has always been a very fertile one. The subject of gastric ulcer, its possible status as a pre-cancerous lesion and the possibility of healing it by medical rather than surgical measures, has been most violently discussed. The internists still argue for medical treatment; the surgeons will admit nothing but a surgical cure. In view of the fact that there is this uncertainty and that many cases are, at first, correctly or not, termed ulcer, which later are found to be typically malignant, it would seem that those cases of chronic gastric ulcer treated surgically, offer the best ultimate prognosis as to freedom from future malignancy.

Other parts of the gastro-intestinal canal offer similar fields. The same arguments hold true for duodenal ulcers, while fissures, polyps and hemorrhoids of the rectum may be the starting point of future malignancy and warrant early surgical cure.

To the gynecologist, preventive surgery is of the greatest usefulness. Probably the various affections of the uterus furnish us with as many, if not more examples of pre-cancerous lesions than any other organ in the body. Myomata of the fundus and chronic erosions and ulcerations of the cervix are especially favorable grounds for the later development of malignancy. Chronic inflammations of either the body or the cervix of the uterus are important as potential carcinomata. The hyperplastic condition of the endometrium in many cases of chronic endocervicitis, although not truly malignant, shows the atypical and endometrial changes often found in connection with malignant areas and may best be considered as pre-cancerous. Degenerating myomata frequently give rise to similar changes in the fundus and the irritating discharges from any of these conditions produce the constant mechanical and chemical irritation which is so predisposing a factor in beginning malignancy. The important thing,

then, in prophylaxis, is to remove as early as possible all chronic ulcerations or inflammations of the uterus, either in the fundus or in the cervix. The earlier the removal of these sources of irritation, the better for the health of the patient. Certainly it should be done before the onset of the cancer age, when malignancy is most apt to appear. The accessibility of the cervix to operation renders it one of the most favorable fields for prophylactic surgery.

Gall-stones are usually regarded as the commonest pre-cancerous lesion of the gall-bladder or the common duct, although chronic cholecystitis is no doubt nearly as guilty an offender. In many cases of carcinoma of the gall-bladder, a careful history shows that the condition has been preceded for years by a chronic cholecystitis or by gall stones. There may have been definite attacks of biliary colic or only the history of long continued symptoms, suggestive of a gall-bladder infection. Statistics given by different writers place the frequency of cases in which carcinoma is preceded by gall-stones very high, usually 60-70 per cent., and the mechanical irritation of the stones is usually considered as the direct causative factor, acting on the already hyperplastic glandular mucosa.

Metastatic carcinoma of the liver and bile ducts may be especially considered in this discussion, as certainly any condition that is secondary could well be prevented by early remedial measures for the primary disease. Carcinoma of the liver is rare as a primary disease and we may well expect that in the surgery of the future, it will be even rarer, as prompt and efficient removal of the primary lesion in the pylorus, gall-bladder or other organs is earlier instituted.

There are many other pathological conditions occurring in the human body which are merely pre-cancerous in their early stages and which could be prevented, by early prophylactic surgery from degenerating into the more serious form. We may cite, for instance, the cases of supposedly benign papillary growths in the urinary bladder, cystic or adenomatous growths of the thyroid which in a certain percentage of cases are followed by carcinomatous degeneration. As our knowledge of early pathology grows, many of the early stages of cancer which are now obscure in origin, will be made clear and the opportunity for preventive surgery will develop.

In general abdominal surgery, exclusive of cancerous and pre-cancerous lesions, the associated pathology of the gall-bladder affords an extensive field for preventive surgery. In it we may find the pathology of practically the whole abdominal cavity. Chronic appendicitis, especially in women, duodenal ulcers, infection of the kidneys and pancreatitis are the most outstanding of these secondary or co-existent lesions. It is an every day occurrence in operations for appendicitis to discover an often previously unsuspected case of gall stones. The question, of course, may arise, as to which condition was the primary one and which was superimposed upon the other, or were both merely co-existent and dependent upon the same etiological factor. In view however, of the much greater chronicity of gall-bladder disease, with its long period of vague symptoms, or of so-called latency, this would seem to be more probably the primary lesion. Appendicitis, on the other hand, while often chronic, and lasting over a period of years, rarely does so without an occasional flare-up, even if subacute, to announce its presence and to display its warning signals. Again, the symptoms of appendicitis are so well-known, and the diagnosis so often made by the patient or the patient's family, that the appendix rarely goes so long unrecognized. Gall-bladder infection, on the other hand, may exist for years, the patient generally considering himself to be the subject of "indigestion," "biliousness," etc. and often considering it unworthy a visit to the physician. Inasmuch as infection usually reaches the gall-bladder by the hematogenous route or by way of the lymphatics, it is reasonable to expect a certain amount of hepatitis in connection with disease of the gall-bladder and this we usually do find, although it is frequently mild in character.

Duodenal or gastric ulcers may be a part of the associated pathology of gall-bladder disease, and the symptoms of ulcer may readily overshadow those of the other condition.

The gynecologist, in operating for pelvic disease in women, not infrequently finds a gall-bladder full of stones, a condition which may have been previously utterly unsuspected.

Kidney infection, especially of the right side, may be secondary to an old cholecystitis, the infection traveling by way of the blood stream or lymphatics or even by direct extension through

the loose perinephritic cellular tissue. It may also follow a gall-bladder disease, through purely mechanical agencies, such as adhesions displacing the kidney, with a consequent kinking or blocking of the ureter. If the infection is hemogenous, it may affect the left kidney also, but this is less usual.

Probably the most serious and therefore, important condition which may be secondary to disease of the gall-bladder is pancreatitis, acute or chronic or even carcinomatous. The seriousness of pancreatitis is unquestioned, and its importance in this connection, great, because the surgery of the pancreas is the surgery of the gall-bladder. The incidence of pancreatitis as associated with cholecystitis, either with or without gall-stones, has been estimated at from 50 to 75 per cent. and many surgeons have found it only in connection with that disease. Cases of suppurative or acute hemorrhagic pancreatitis are considered by most authors as wholly dependent on a previously existing case of cholelithiasis, and this is further evidenced by the relief afforded by operation not upon the pancreas but upon the biliary tract.

The close pathological connection between these two diseases is paralleled by their close anatomic relationship. The openings of liver, gall-bladder and pancreas into one duct make of them practically one system, with a marked liability to the extension of infection from one part of the tract to another. Infection of the pancreas from infected bile or from backing up of the bile into the pancreatic duct or even from mechanical pressure from an enlarged gall-bladder, stones or blocking of the duct, with subsequent backing-up of the bile, is frequent. To whatever factor this infection is due, however, the main fact to be viewed in this discussion is that pancreatitis is practically always secondary to a cholecystitis and that early surgery of the biliary tract, usually the gall-bladder, may effectually prevent the secondary or subsequent disease.

In view, also, of the findings following the two operations, that of cholecystectomy and cholecystostomy, with the majority of surgeons now favoring the former as the operation of choice, we find here a further argument for cholecystectomy as compared with cholecystostomy. In a previous study of the end-results of these two operations, it seemed fairly conclu-

sive that the ultimate results, those obtained a number of years after operation, showed the preponderance of permanent relief from symptoms as well as freedom from complications or secondary infections, to fall to the credit of total extirpation of the gall-bladder as opposed to the results following only the operation of drainage.

If, by cholecystostomy, we relieve only, if we leave opportunities for the later development of pancreatitis as well as the recurrence of other symptoms, we have not done all that surgery should do. We may have relieved the immediate condition, but we have not prevented future illness. As a prevention, then, of pancreatitis as well as other secondary infections, we may urge the early surgical treatment of the gall-bladder, with cholecystectomy as the operation of choice whenever choice is permitted. It may be added, too, that in the hands of competent surgeons, that choice is very wide.

Before leaving the discussion of the gall-bladder as a field for prophylactic surgery, we should not fail to mention its possibilities as a chronic focus of infection. Chronic cholecystitis may and often does set up metastatic infections in far-distant parts of the body. Obscure cases of arthritis, disturbances of metabolism, even abscesses have been recognized as due directly to a diseased gall-bladder and have been cleared up entirely, even though chronic and of long-standing, by the removal of the original focus of infection, the diseased gall-bladder.

Although it is much rarer that an infected appendix is allowed to remain than is a diseased gall-bladder, still the chronic appendix has a considerable number of secondary conditions arising as sequelae to it. Chief among these are various pelvic conditions in women, in which infection spreads, either by direct contact or through the lymphatics to the ovaries and tubes. It is certain that exudate from an acute appendix may gravitate into the pelvis and form extensive adhesions there, sometimes without leaving any great trace on the appendix. The question arises in this connection, whether or not cases of appendicitis in children may not in this way lead to sterility in later life. The possibility of this complication is a very important one, especially in relation to the woman's future welfare and happiness. In many female children, it is found that the appendix lies very low, often hanging over the pelvic brim and this

makes the probability of extension of infection very strong. Adhesions forming about the ovary from this source may lead to cystic ovaries. Adhesions may likewise pull down the uterus in a position of retroversion or retroflexion, with a later history of severe dysmenorrhea. The appendiceal type of dysmenorrhea is common and consists, really, of a subacute exacerbation of a chronic appendicitis, occurring at the time of the menstrual period, because of the pelvic congestion present then. These cases of dysmenorrhea are invariably cleared up by the removal of the appendix and any other subsequent pathology. perinephritic abscesses have been secondary to the rupture of a retrocecal appendix, and even an extensive involvement of kidney-tissue has occurred. Appendiceal abscesses may burrow along the muscle-wall and may simulate a psoas or other deep-seated abscess.

SUMMARY

In conclusion, then, let us look again at the possibilities of preventive surgery as compared with those of preventive medicine. Although a recent expression and to many a new idea, the analogy holds good throughout. If prevention is to be the keynote of modern medicine, it can and should be the keynote of modern surgery as well.

It has been for far too long the custom to think of surgery, largely in connection with advanced disease, and to be content if it results in relief of the immediate cause for operation. Now, however, when most of the risks have been taken from surgery by good aseptic technique and when surgeons are vastly more competent than formerly, we have a right to expect from surgery, not only the relief of those symptoms for which the patient comes to operation, not only the treatment of the particular lesion at hand, but a careful survey of the field and a removal of the cause for future trouble. That is, operation should be not only palliative, not only curative, but prophylactic as well.

Let us recognize the need for early recognition of symptoms, for early diagnosis and early operation, not alone to relieve pain or to save life, great though these aims may be, but to prevent the occurrence of the many secondary conditions which are often graver than the primary disease. In the light of modern advancement, when medicine has gone far beyond the

stage of curative treatment only, why should not surgery progress also to this much greater and vastly more desirable goal?

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ESSENTIALS OF A BALANCED DIET

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Babylonian, Assyrian and Greek mythology alike taught that food and drink Gods consumed were of higher quality and potency than were permitted to mortals. They were strictly withheld from mortals, it mattered not how great and acceptable were their services to gods; because the meat and drink of Gods had the quality of making Gods of mortals, conferring on them godly wisdom, power and immortality.

The following verses from Genesis are significant and corroborative of the foregoing:

"And the serpent said unto woman, ye shall not surely die. For God doth know that in the day ye eat thereof (meaning tree of knowledge of good and evil) then your eyes shall be opened, and ye shall be as Gods, knowing good and evil.
* * * And the Lord God said: And now lest he put forth his hand, and take also of the tree of life, and eat, and live forever; Therefore, the Lord God sent him forth from the Garden of Eden to till the ground from whence he was taken."

So Adam and Eve were ordered to live on baser foods, "the herb of the field." They had already eaten of the tree of knowledge, of good and evil, and their eyes had opened, but they were not permitted access to the tree of life, and as the result, their descendants have remained mortal to this day.

The ancients believed that close relationship existed between the quality of food and the personality of the consumer, and that the deterioration of food meant deterioration of the person or race and vice versa. Shakespeare refers to this belief when he makes Cassius say, "Now, in the name of all the Gods at once, upon what meat doth this our Caesar feed that he is grown so great?"

Greek gods may have lived on a monotonous diet of ambrosia and nectar, but human beings in order to develop and function properly must have a varied diet of many articles of food, be-

cause these mortals are of many parts, fearfully and wonderfully made.

One is tempted to suspect if the outburst of ill-temper denizens of Olympus at times displayed toward each other and their human worshippers were not due to ill-balanced diet they partook of.

A food is any substance which will supply one or more material needs of the human body. Foods must be both constructive and energy producing. Food substances are classified as follows: 1. Proteins; 2. Carbonhydrates; 3. Fats; 4. Minerals; 5. Water; 6. Vitamines.

1. Proteins include all organized nitrogenous substances, animal or vegetable. Fifteen per cent of their weight is nitrogen. All body cells contain nitrogen. It is necessary to formation, restoration and maintenance of every important body structure.

To keep the body in a healthy state about 1 gram of protein for each kilogram of body weight must be included in the daily diet. One-third or one-half of this amount should be eaten in the form of lean meats, and the rest in the form of various vegetable proteins, eggs and milk. Animal protein is easily digested and assimilated. It also helps utilize a greater proportion of vegetable proteins.

Proteins are split into amino acids by hydrolysis and are absorbed into the blood. Almost all of the daily intake is excreted in the form of urea (Van Slyke). The liver does not store amino acids; it converts them into urea, which is excreted by the kidneys. Muscles store but a small fraction of amino acids. Practically there is no provision made in the human economy for storage of any considerable amount of proteins. Part of the amino acids are incorporated into the structure of the body and another part is converted into ammonia and that later into urea and excreted. The rest is converted into glucose and serves as fuel.

It is of great moment to remember that in diabetes when carbohydrate is excluded from the dietary, or greatly restricted, 58% of the protein ingested is converted into glucose and behaves in every respect as carbohydrates.

Rather large amounts of proteins are permissible during the growing period of life, during convalescence from exhausting diseases and when long periods of severe exertion are followed by hypertrophy of muscular tissue. To consume a

large amount of protein is worse than useless, because it cannot be stored in the body; besides, it overworks the liver and the kidneys. The part that acts as energy producer can be replaced to better advantage by carbohydrates and fats.

2. Carbohydrates are starches and sugars. They furnish heat and energy, conserve protein, and if the amount is more than can be utilized they are stored in the liver in the form of glycogen and elsewhere as adipose tissue and if the amount of carbohydrates is very large and rate of intake fast it may overflow storage capacity of the body and appear in urine in the form of glucose.

When prolonged hard muscular exertion is required, addition of sugar to food ration will increase the capacity for work and postpone the feeling of fatigue. It is best to take most of the carbohydrates needed in the form of starch. While it takes a longer time to digest and assimilate than sugar, there is not much danger of flooding the liver with glucose beyond its capacity, as happens if large amount of sugar is eaten.

Starch is converted into sugar into the digestive canal. Sugar undergoes only a slight change before assimilation and practically with no loss. From the storehouse of the liver and to a lesser degree from the muscles, blood is supplied with glycogen to the concentration of .015, or 15 per thousand.

If carbohydrates taken are insufficient to supply the immediate needs of the body, proteins and fats are drawn upon to fill the deficit.

Sugar must be used as food; its use as condiment leads to its abuse. Among the dietetic vices of our times, excessive use of sugar comes first, protein abuse closely following.

3. Fats. One-sixth of the body weight is fat. The chief source of fat in the body is carbohydrates; the rest is derived from fats and proteins. There is about one-fourth ounce fat in the circulating blood. Ninety per cent of body fat is utilized before death from starvation takes place.

Fats are absorbed as fatty acids and glycerine. Glycerine forms 10% of fats and acts as glucose. Fats are burned up into CO_2 and water. They spare protein, form part of the body tissues, including nerve tissue, yield energy and heat, can be stored in body as reserve, give protection to important tissues and organs and serve as lubricant.

Butter is the best fat for food purposes. It

contains 80% pure fat. It may be consumed in large amounts, up to one-fourth pound daily, with benefit. This is important to have in mind when enough carbohydrates and proteins are not available, or when they are contra-indicated on account of some metabolic abnormality. The use of a large amount of fats leads to acidosis unless carbohydrates are included in the diet, at least in the proportion of one part to three of fats. "*Fats are burned in the flame of carbohydrates.*"

4. Minerals. There are seven pounds of minerals in the human body; five-sixths of the total is in the bones. Mineral matter must be regarded as food. Death would ensue in 30 days if minerals were left out of food entirely. In Forster's experiments dogs and pigeons fed on demineralized foods died earlier than those entirely deprived of food.

The principal minerals of the body are sodium, potassium, calcium, magnesium, iron, phosphorus, chlorine, sulphur, traces of silica, fluorine, iodine and others.

These minerals form part of the body tissues. They are essential to nerve and muscle reaction and osmotic action of body fluids. Bunge has shown that nitrogenous products of metabolism cannot be eliminated unless mineral salts are present in normal proportion.

About 10 grams of minerals are taken into the human body and about the same amount is excreted daily in urine, feces, sweat and tears.

The mineral salts combine with organic material. On oxidation of tissues they are released and excreted or they may recombine with freshly absorbed food materials and go through the same process again.

Most of the sodium is taken in the form of sodium chlorides. It is also present in many food substances.

Potatoes and peas contain a large amount of potassium. All food minerals are widely distributed in food materials, often several of them being present in the same vegetable, fruit, cereal and meats.

All sea foods contain comparatively large amount of iodine. Among vegetables, green beans, peas, tomatoes; among fruits, bananas contain iodine.

In goitrous regions addition of some sea food to the dietary once or twice a week would be of practical value and would in all probability do

away with the necessity of administration of iodine and iodides.

Iron is present in comparative abundance in meats, eggs, spinach, asparagus, strawberries, apples, cherries, peas, beans and a legion of other food articles.

Sulphur is found combined with animal proteins, legumes and vegetables of cabbage family, etc.

Calcium is present in milk, eggs, leafy vegetables, etc.

Phosphorus is found in flesh foods in complex organic combination and as phosphates in alkalies, and alkaline earths.

A well balanced diet contains ample provision of food minerals.

5. Water. Sixty per cent of the human body consists of water. It must be classified as food, although it undergoes no change in human economy.

A glass of water before meals is useful; one or two glasses of water taken during the meal is not objectionable. Water imbibed three hours after meals is probably most useful. To wash down food with water is an injurious habit. Digestion begins in the mouth; sufficient time must be had for mastication and thorough mixing of food with saliva. Drink soft water, spring water is preferable to river water, and river water to well water. Unspoiled thirst is a good guide to the amount of water needed.

6. Vitamines. Vitamines are substances of undetermined chemical composition. We don't know their exact nature, but we know when they are present. Their absence gives rise to conspicuous pathologic changes. The first vitamin was discovered in 1906. Since then more have been identified. In all probability there are more of them and as they are brought to light, more of our metabolic mysteries will be solved.

Vitamin A or fat soluble *A* is found chiefly in butter and other animal fats, fish, oils, eggs and green vegetables. Its deficiency leads to xerophthalmia; acuity of vision also suffers on that account.

Vitamin B or water soluble *B*. This is found in the germ of cereals, eggs, milk, yeast, liver, root and leafy vegetables and fruits. It is called also anti-neuritic because it supplies the nerve reserve. Its absence causes beri-beri and other deficiency diseases. The processes of bolting and polishing removes this vitamin from wheat and

rice. Our white bread is devitalized to a great extent.

Vitamin C is present in fruits, green leafy vegetables and milk. It is anti-scorbutic, curing or preventing scurvy and preserving teeth and bones. Orange juice is a pleasant and effective anti-scorbutic. Heat and drying destroy the vitamin either wholly or partially. Fresh fruits and vegetables must form part of our daily diet. In the hygiene of the mouth, anti-scorbutic vitamin has an important place.

Vitamin D, anti-rachitic, is present in cod liver oil and egg yolk.

Vitamin E or *X* is found in lettuce, whole wheat and milk. This is called fertility vitamin.

In providing food ample provision must be made for vitamins. Their absence is a serious defect.

Sir David Bruce relates how during the great war there was shortage of fresh food among English and Indian troops in Mesopotamia. Scurvy broke out among the Indian troops and beri-beri among the English. The Indians lived on dried pulses, such as peas, beans and lentils and the British on tinned beef and biscuits. The former's diet was deficient in anti-scorbutic vitamin; the latter's in the anti-neuritic factor on account of use of white flour from which the germ of the grain had been removed. Dried pulse was soaked in water and spread out in shallow layers. The heat caused them to sprout. They were then dried, ground and cooked and rationed out and scurvy disappeared. Slight sprouting produced the anti-scorbutic vitamin. I remember how years ago grains were treated in the same manner during long winters in Armenia. It made a savory dish and kept scurvy away until spring greens were available.

Vitamins are large factors in building up resistance to disease. There are grounds for belief that certain foodstuffs exposed to sunlight and ultra violet rays acquire or become richer in vitamins.

Walter A. Eddy, Lash Miller, Herbert M. Evans, H. C. Sherman and many other equally able scientists are camping on the trail of the elusive substances called vitamin. We may look forward with confidence to newer revelations on the subject at no distant time.

After this brief summary of all classes of food materials, we will consider correct amount and

kind of food necessary for maintenance of life and of health.

The calorie is the unit we measure our food by. It is a unit of heat. One calorie equals the amount of heat necessary to raise the temperature of one liter of water 1° centigrade. It measures only fuel value of foods, and all food substances are not burned up. 1 gram of protein yields 4 calories; 1 gram of carbohydrates 4 calories and one gram of fat 9 calories. In figuring amount of food, weight of the person, amount of physical exercise, the age and outside temperature are determining factors. Mental activity of any degree is ignored in the calculation of the caloric requirement of body. In other words, Plato and a fool are rationed alike. The calorie is not accurate but a close approximation. It will serve for practical purposes till a more accurate unit of measure is found.

A person of average weight, 150-160 pounds, requires 1840 calories every 24 hours, resting in bed. A man in sedentary occupation requires about 2200 food calories. If he takes 2 hours of moderate exercise daily he will need 2500 calories daily. A man at moderate work must be allowed 3000 food calories. A man at farm work needs 3500 calories. Children are given a comparatively larger number of food calories. One's state of health and efficiency is the best guide to the number of calories needed.

It is time consuming to figure out caloric values of one's food every day. Occasional checking up would be sufficient. Any new item added could be easily evaluated.

The tendency in the past has been toward excessive meat and sugar consumption. The diet of a large amount of meats, sugar and devitalized cereals is injurious, just as much by its excess as by what it crowds out of the dietary.

Many think, increase in heart and kidney diseases, arteriosclerosis and high blood pressure are due, at least, partially, to the excessive intake of badly balanced food.

A well balanced diet should consist of 10% or less protein, 30% fat, 60% carbohydrates, vitamins and about 10 grams of minerals.

For a person weighing 60 kilograms, rationed at 2500 calories daily, 60 grams of proteins (250 calories) would be needed. Of this one-third to one-half may be taken in the form of flesh, the rest being obtained from eggs, milk,

cereals, peas and beans, etc. 750 calories are furnished by fats in the form of butter, meat fats, eggs, cream, nuts, olive oil, etc. 1500 calories are contributed by carbohydrates, that is bread, cereals, milk, fruits, sugars, root vegetables, etc. Carbohydrate foods are so numerous and abundant and mostly agreeable to taste, that there should be no difficulty of obtaining caloric value assigned to them in the dietary.

There is no way to measure vitamins. It is certain no one has been harmed by excess of vitamins. A dietary that contains milk, butter, fresh fruits, fresh leafy vegetables and eggs is well balanced in regard to vitamins and minerals.

In recent years increased consumption of milk, fruits, and vegetables is in accordance with the most advanced ideas in dietetics.

There still remain dietetic riddles. Here are some of them:

1. In cases of extreme emaciation from prolonged sickness or starvation there is gain in weight even on a very low diet.

2. Near East Relief provides only 2000 calories a day for orphans in its charge. This seems to be ample for growth, heat and energy necessary. These children are developing normally.

3. Chinese and Japanese have for centuries lived on rice and soya beans. They are capable of sustained hard work and prolonged privations.

4. There are those who remain "thin as a rail" in spite of abundance of nutriment they receive.

5. The obese are so, not because of excessive food intake, but for some other cause still unknown.

6. Eskimos live mainly on meats, fats and partially digested moss. Natives of pampas live on meat. Steffensson lived on meats and fats for months without any apparent injury to his health.

Evidently there are factors in the adaptability of the human organism and qualities in food stuffs still unknown to us.

Our present rules of dietetics are based on our present knowledge. There is more to be known about foods and their proper blending. Till then we must abide by these rules.

Ray—Well, I am going over to the hospital to be operated on tomorrow.

May—Good luck to you. I hope everything comes out all right.

APPRENTICESHIPS IN MEDICAL EDUCATION

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CHICAGO

As a product (I had almost said victim) of the present system of medical education I should like to express my opinion.

I believe the medical colleges of the state universities can be taken as typical medical schools representing the so-called higher standards. I graduated from one of these in 1919 and served an internship in the University hospital which was an integral part of the University. The internship I took was not of the rotary type as the hospital directors thought that a rotary service was of less value than a straight service. My choice was internal medicine because I had become impregnated with the idea that diagnosis was the basis on which intelligent treatment must rest. My internship was supposed to have run for one year but after six months it was my opinion that the remaining six months were not worth what they would cost me in time and effort because there would necessarily be a great deal of repetition and I was out of funds. I had learned some of the fundamentals of diagnosis and felt well able to do the ordinary medical procedures which one does in the practise of internal medicine. With all due respect to my departmental chief for whom I have always had the greatest admiration I have never regretted not rounding out my last six months of service. At the end of the first six months then I came to Chicago and since then have been engaged in practise with I believe the average amount of success. I did not and do not consider myself a specialist but my training being limited to internal medicine I am necessarily forced to refuse all other cases except certain few minor ones not of a strictly medical nature but which I feel I can conscientiously handle.

During the past five years I have been keenly conscious of the fact that the end product of six years' medical training plus my internship is far inferior to that which I had reason to suspect it would be before matriculating. In other words I feel that I have not had value received. True I have been instilled with ideals but I have not the money with which to fulfill them.

Since graduation I have earnestly and studi-

onsly tried to compensate for my neglected training in such other branches as obstetrics, pediatrics and surgery but one progresses slowly in the art of these subjects if one has not the confidence to accept representative cases for study and treatment; besides there is the all important question of fairness to the patient.

For a young man to establish a practise limited to a field even as broad as that of internal medicine is a Herculean task in a city and a physical impossibility in the smaller communities where there are not enough people to support any one specialty and where the people rightly expect their physician to be able to do a version or a thyroidectomy and to treat either marasmus or tabes. When I matriculated in a medical school I expected to be graduated as a general practitioner with a working knowledge of the clinical art in all its branches but I now find myself after five years competently at ease with only some features of one branch and thus with a rather limited field of usefulness. I realize that I could do as many of the others have done and that is to carry on a rather dangerous flirtation with surgical and obstetrical craft but for my own peace of mind to say nothing of the patient I prefer to attempt only what I conscientiously feel I can finish gracefully. I have often been advised by some of my more adventurous medical friends to attempt the ordinary surgical procedures with the none too comforting statement that Nature is kind and most obstetrical cases are normal but what a tragic excuse for the higher standards of medical education and what an insult to the unsuspecting public to supply it with a doctor who can trace the life history of a red blood cell or beautifully stain the diphtheria bacillus but who can neither ligate a bleeding artery with a feeling of competence nor do an intubation on a strangling patient even when made necessary by that same Klebs-Loeffler bacillus.

Nor does the rotary internship solve the problem as witness the number of these young men who are daily calling on their older medical brothers to do their surgery. Six, seven or eight years in some instances should do more than teach a man the science of medicine; it should teach him more of the art.

I am opposed to the lowering of the standards of medical education but rather highly in favor of raising them. By raising them I do not

intend to add a year or two to an already long course stuffing it even fuller with scientific detailed minutiae but rather to weed out these same impractical details and substitute an earlier and fuller acquaintance with the patient.

If we are to demand from six to eight years of preparation let us really prepare our applicants for the various contingencies to be met in daily practise. I believe every physician no matter what his specialty should be able to do at least the ordinary things in all branches of medicine and surgery, if not to make a business of doing them then for the sake of the practical accomplishment and for the broadening effect upon his general usefulness. The one important reason why I remain in the city is that from such a large collection of people I am able to select the ones which my own individual training has enabled me to help, but my point is that from six to eight years of medical schooling should train a man to have a far wider application of his education.

I see much in favor of the apprenticeship system as an integral part of the curriculum and I think the man with whom the apprenticeship be served should preferably be an able general practitioner. By this system a young man would early be put into the workaday harness where he would see a cross section of a typical condition instead of seeing as he so often does a section through an atypical condition, for only a comparative few can become professors or consultants. As an apprentice the young man would see something of the relationship between the family physician and the patient; he would see the value and necessity of knowing how to "handle" patients with regard to inspiring confidence and thus affording a willing cooperation which is indispensable. In no curriculum I know of is there any systematic effort made to teach the prospective doctor how to deal with the patients mental makeup. We should devote more study to the human nature element and take more note of the mental factor in therapeutics. This ability to inspire confidence should not be left to the individual man to work out for himself entirely but should be taught by the ethical masters of the art who seem to be ever conscious of its importance but disdain to speak of it probably because they fear to be considered unethical and mercenary. Personality is a vital factor in any profession and

the development of it could be brought about by any studious young man given the opportunity to observe the methods of an older man in private general practise. In the teaching hospitals the personality of the chief while of immense importance to the department is seldom a measurable factor in the relationship between patient and physician because the contact is less constant and less intimate than in private practise as a rule, the patient perhaps only unconsciously experiencing a blanket enthusiasm for the institution rather than an acute regard for any one in particular. Such a condition never obtains in private practise and if we are to teach young men to diagnose and treat disease we must also teach them to inspire confidence so that the patient will willingly submit to diagnosis and treatment rather than defiantly.

Medical faculty members and teaching hospital staff physicians have too rarely been general practitioners and too rarely have they had to work their way through from six to eight years of medical training. Too early specialization has been the rule with too many of them.

I believe that Dr. W. A. Pusey is really more interested in the curtailing of time and money at present required to become a physician than he is in a possible shortage of physicians in the rural communities and I feel that if the medical schools of the country would turn out general practitioners as their finished products there would never be such a shortage because the product would find its way to the best market namely the smaller communities.

Viewing medical education as a commodity and applying an ordinary business rule we would not if we were the prospective buyer believe all that the merchant had to say in favor of his merchandise. As one modern sales organization advertises today of its product "ask the man who owns one" so with medical education. I think the young men who have graduated from medicine within the past five years and who have tested their training in general practise stand in a remarkably pertinent position to testify regarding their "purchase" because they as it were "own one."

1305 E. 63rd Street.

Looking at it from another angle, mud thrown is ground lost.—*Detroit News*.

ENCYSTED SURGICAL SPONGE— REPORT OF A CASE

THOMAS P. FOLEY, M. D.

CHICAGO

In the course of a necropsy on an adult female a tumor was seen in the abdomen. It was in the left iliac fossa firmly adherent to the omentum above and by a tag of omentum to the peritoneum below. The growth was the size of a golf ball and the capsule was smooth, except at the places of adherence.

On opening the capsule, which was 5 mm. in



Fig. 1. Cyst cut open to expose sponge.

thickness, the content of the cyst was seen to be a surgical gauze sponge firmly compressed and encysted by the omentum.

The body from which this foreign body was removed was that of a female 30 years of age. There was an old scar on the abdomen in the mid-line beginning half way between the umbilicus and the symphysis and extending to the symphysis. In the clinical history which accompanied the body an operation was mentioned, but the time was not given. For obvious reasons no attempt was made to get details from the relatives.

Whether or not symptoms ever occurred as a result of the condition could not be determined from the history. From the gross pathological changes in the other organs, if distress had been present, it was not sufficient to deprive the pa-

tient of what are known as the good things of life.

This curiosity is reported in the hope that it may bring moments of consolation to surgeons made uneasy by ex-patients who claim damages for carrying excess baggage in the way of forceps, scissors or sponges.

MIGRAINE WITH PRONOUNCED ABDOMINAL CRISES

WILLIAM A. BRAMS, M. D.

From the Department of Pathology and Bacteriology, College of Medicine, University of Illinois, and The Michael Reese Dispensary.

CHICAGO

Migraine, in its several forms, has been described by numerous authors but comparatively little has been written on the variety of migraine in which the abdominal symptoms dominate the entire clinical picture. Thus E. Flatau⁸ classifies the disease as follows, according to the particular field where the intensity of the symptoms is greatest:

1. Hemigrania vulgaris, the ordinary form of head migraine.
2. Hemigrania ophthalmica.
3. Hemigrania epileptica.
4. Hemigrania psychica.
5. Hemigrania ophthalmoplegica with paralysis of the eye muscles.
6. Hemigrania facioplegica.

This author merely mentions that abdominal pain or abdominal symptoms may be the most prominent manifestation during an attack of migraine but he does not place this type in a class by itself. Moebius¹¹ in his notable monograph on migraine, describes a case he observed in a physician thirty-eight years of age in whom the attacks of migraine consisted chiefly of periodic attacks of severe abdominal pain. He considered this abdominal pain the equivalent of the usual hemigrania seen in the vulgar forms of cephalic migraine. Other cases in which the abdominal pain was considered to replace or accompany the ordinary hemigrania in migraine were described by H. Curschmann⁵ and by Adolph Schmidt.¹³ N. Ortnier¹² described a form of epigastralga which he considered as abdominal migraine and which occurred mostly in women. The clinical picture consisted of periodic attacks of severe, epigastric pain with but little radiation. These attacks accompanied, alternated with or replaced

the hemigrania, and other dyspeptic symptoms such as nausea, vomiting and diarrhea were also present. The attacks lasted from a few hours to one to two days and the patient felt perfectly well during the intervals. Of particular interest is a case reported by this author in a man thirty years of age who had a family history of migraine and who himself suffered from typical attacks of head migraine which alternated with severe attacks of abdominal pain in the right hypochondriac region. There were no chills or fever, the liver and gall bladder were neither enlarged nor tender, the skin over this region was not hyperesthetic and the tests for urobilin and urobilinogen were negative. Organic disease and reflex pain from other regions were carefully excluded and the subsequent course of the disease justified the assumption that this patient was suffering from attacks of migraine which at times manifested itself as a severe epigastralga instead of hemigrania.

A series of seven cases of migraine with very prominent abdominal crises was reported from the Mayo Clinic by J. A. Buchanan.⁴ All of these patients had a family history and the usual characteristics of migraine and five of them were operated upon for various reasons but without relief. R. P. Finney⁷ reported a case in a man who was at first considered to be suffering from chronic appendicitis with recurring attacks of pain, but removal of the appendix produced no change in the symptoms. Careful examination of the abdominal viscera during the operation revealed no abnormal condition within the abdomen.

The author,³ in a previous publication, reported a series of cases of migraine in which the abdominal pain or dyspeptic symptoms were the outstanding features of the attacks. A clinical classification was suggested in which three varieties were mentioned. 1. The ordinary form in which the abdominal pain entirely replaced the hemigrania or accompanied the cephalic migraine. 2. The vicarious type in which the abdominal attacks alternated with the hemigrania or replaced the cephalic migraine for a variable length of time, after which the hemigrania again recurred while the abdominal attacks ceased. Such cases have also been described by A. Bary,¹ E. Mendel¹⁰ and H. Curschmann.⁶ The forms in which hemigrania alternated with epigastralga were also described by L. Bordoni² and by

N. Ortner.¹² 3. The larval or irregular form in which there were attacks of nausea, vomiting or diarrhea and in which the abdominal pain was not severe.

The individual attack consisted of a severe, cutting or boring epigastralgia which occurred in periodic attacks separated by intervals during which the patient felt perfectly well. In fact, some of the patients felt unusually well a day or two just before an attack occurred. The pain was independent of and uninfluenced by food or the time of eating. Vomiting of bile and mucus was often present but had no influence on the pain, although it often occurred toward the end of the attack. Physical examination revealed nothing abnormal and dietetic measures had no effect on the attack. The abdominal pain and distress were sometimes so severe and so completely overshadowed the other symptoms that an error in diagnosis could easily have been made if the condition were not constantly kept in mind. This was illustrated by another case which recently came to our attention in which the abdominal symptoms so overshadowed the hemicrania that a tentative diagnosis of gall stones or peptic ulcer was made and the patient was transferred to the department of gastroenterology to determine which of these two conditions was present.

Case. A. G., aged 34 years, a female patient, was admitted to the medical service of the Michael Reese Dispensary and complained of attacks of very severe, constricting and cutting epigastric pains which did not radiate and which were not affected by food, vomiting or other measures directed against a gastro-intestinal disorder. The attacks began rather abruptly, lasted about two days and ended in a short time after which the patient felt well and was in particularly good health just before an attack. Vomiting of bile and mucus but not of food or blood occurred several times during an attack, but did not begin until the abdominal pain had already been present for from five to six hours. The patient had been suffering from this illness for about ten years and the individual attacks occurred about once in ten to fourteen days throughout the entire year and without apparent cause. The attacks are ushered in by a feeling of burning or tingling in both legs which lasts for several hours. This is followed by very severe headache which is always unilateral and sharply limited by the midline of the head. The abdominal pain begins about one-half to one hour after the headache has begun and is followed in several hours by nausea and vomiting as previously described. There is no relief after vomiting which recurs about ten or twelve times. White spots before the eyes and a slight vertigo occur at the beginning of an

attack and dimness of vision is also present but the patient never loses consciousness. The bowels are in order except for slight constipation during an attack. There are no cough, chills, fever, sweat, jaundice or loss of weight. Menstruation occurs every three weeks and the flow is sufficient. The patient's mother has typical attacks of migraine but there is no family history of epilepsy or insanity in the patient's family.

The examination revealed a well-nourished middle-aged female. The pupils were equal, regular and reacted to light and accommodation. There was no nystagmus, jaundice or anemia; the thyroid was slightly enlarged but there were no other signs of Basedow's disease. The tonsils were large, the teeth in good condition and there was no enlargement of the cervical lymph glands. Examination of the heart and lungs revealed nothing abnormal. The blood pressure was 125 systolic and 90 diastolic. The abdomen was flaccid with moderate tenderness over the sigmoid. There was no tenderness over the gall bladder or stomach, the reflexes were exaggerated, sensibility was normal and there was no incoordination of the extremities. The urine showed a specific gravity of 1.027, was acid in reaction, contained a trace of albumin and an occasional leucocyte. There was no sugar. The Ewald test meal showed well digested contents with free HCL 1.1 and total acidity 24.6. The stools were brown and well formed but contained no blood on chemical examination and nothing abnormal microscopically. The blood examination showed hemoglobin 80%, red cells 4,740,000, white cells 9,400, with polymorphonuclears 61%, lymphocytes 24%, mononuclears 10% and transitionals 5%. The vaginal smear showed many leucocytes, no gonococci and a few Gram negative bacilli and cocci. Gynecological examination showed a relaxed pelvic outlet with slight cystocele and rectocele and evidence of a slight endocervicitis. X-ray examination showed nothing abnormal in the heart or lungs and the stomach was normal in size, shape and outline. There was some stasis and surging in the second portion of the duodenum, but the duodenal outline was normal. The Wassermann of the blood was negative and examination of the sinuses and optic fundi showed no pathology.

In considering the diagnosis of an abdominal crisis in migraine great care must be taken to exclude organic and other functional diseases. The abdominal crises of tabes and Basedow's disease must be considered and reflex pains from diseased organs must also be excluded. The condition described by Grasset⁹ and named by him "Nevropathie psychosplanchnique" in which visceral nervous symptoms and psychical disturbances are present must be considered. W. Vorkastner¹⁴ is also of the opinion that psychical disturbances or mental excitement may be associated with neuralgic pains in the abdomen, but this author points out that great care must be taken in assigning a functional cause for abdominal

pain of any sort. Other conditions to be considered in the differential diagnosis are subdiaphragmatic angina pectoris and pancreatic disease.

The pathogenesis of these attacks of migraine in which the abdominal pain dominates the clinical picture during the attack cannot be easily explained. The prominence of the abdominal pain would, perhaps, speak against the theories that migraine is a result of an affection of the brain substance or meninges. The absence of any symptom during the intervals, the negative result of the examination of the patient and the fact that the patient feels particularly well just before an attack would speak against the theory of a reflex factor from the gastro-intestinal tract. The vasomotor or sympathetic theory in which the sympathetic ganglia are supposed to play a part due, perhaps, to some influence resulting from an endocrine or metabolic disturbance is the explanation which appears the least objectionable. It must be mentioned in passing that there was no direct evidence of such disturbance in our case.

RESUME

1. Migraine may manifest itself by attacks in which severe abdominal pain dominates the clinical picture.

2. Great care must be taken in making the diagnosis of abdominal migraine, and organic disease as well as reflex pains from other regions must be carefully excluded.

3. The outstanding features of his disease are a history of migraine in the family, the occurrence of typical hemicrania or its equivalent during an attack, the absence of all symptoms during the intervals and the resistance of the symptoms to all treatment except that directed to the migraine itself. The attacks are periodic, setting in abruptly and are often preceded by an aura. The paroxysm may last a few hours to one or two days and usually ends with the patient feeling somewhat weak but apparently not having suffered any permanent injury.

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THREE MONTHS' AMNESIA FOLLOWING MOONSHINE WHISKEY DEBAUCH

B. LEMCHEN, M. D.

CHICAGO

The case I am reporting is as follows: Mrs. Emma G—, aged 56, native American, married, wife of a machinist, no children, was admitted to the Chicago State Hospital on October 9, 1924. The County Social Service gave the following information: Patient was transferred from the County Hospital to the Psychopathic Hospital, October 4, 1924. Patient had been married for 30 years and had spent most of her life in Ohio. She had had no serious illnesses. Had several miscarriages and never gave birth to a full term baby. She has been partially paralyzed for some time. The Psychopathic Hospital notes state: patient sees many butterflies around her room and they are disturbing her. The history obtained at the Chicago State Hospital and given by her husband is as follows:

Her family history is not of importance. Personal history: patient was married 29 years ago; has had several miscarriages. She passed her menopause some time ago. She and her husband were both drinking heavily for some time and often drank moonshine. About two months before patient was admitted to the Chicago State Hospital, while riding in the street car with her husband, she suddenly straightened out, appeared rigid and had to be almost carried home. After that her left side seemed paralyzed for a day or two and she has not walked well since. She talked incoherently for some time afterwards and has since talked irrationally at times. Said she could hear a brother who has been dead for twelve years, talking to her and also talked of seeing visions.

Patient was admitted to the Chicago State Hospital, October 9, 1924, as a stretcher case. At that time she thought she was in the Eye and Ear Hospital. Her speech was rambling. Physically the mucous membranes were cyanotic; respiratory system negative; heart sounds regular and distinct; blood pressure was systolic 120;

diastolic 80. Abdomen was distended and apparently contained fluid. Patient could not stand alone, due to weakness and apparently had foot drop of both feet. Pupils reacted sluggishly but were equal and regular. Articulation was normal; fine tremors of the tongue and fingers. Reflexes—superficial were normal, deep exaggerated, plantar normal and organic intact. Spinal fluid examination: cells, globulin and Wassermann was negative; blood Wassermann was negative; urinalysis was also negative.

The mental examination, October 11, 1924, showed the patient to be quiet and orderly since her admission and oriented for place and person. She gave her name correctly; said she was born May 29, 1868, in Ohio; that she attended school until the age of 15. She told the examiner she never had any children. She said this hospital is the Crazy Hospital in Chicago. She gave the date as September, 1824 (October 11, 1924, was correct). Regarding her commitment she said she was walking along the street looking at cars when a friend came and took her teeth away from her. She then ran and passed two ruffians who chased her. She saw the sign of this hospital and came in here. (She was regularly committed from the Psychopathic Hospital). She told the examiner that her husband is in the State Penitentiary in Joliet because he shot the Indiana Co. Horse Doctor. Her husband drinks and he shot her twice. Her husband is holding up people, but never gets any money. She thought she was here two weeks while she was here only two days. She tells of different experiences (almost like a fabrication of memory). At times she would talk to imaginary people but deny that she saw or heard anything. This patient has been in bed for almost three months, unable to walk on account of foot drop. She has also developed anesthesia of the lower extremities. She told of different imaginary experiences until about the middle of January, 1925, when she suddenly began to take notice of her surroundings. She walked with assistance until January 24, 1925, when she became clear and her foot drop improved sufficiently that she could walk without assistance.

A mental examination on January 24, 1925, showed that the patient was clear and oriented. She gave her name, the date and the name of this place correctly. When asked how and when

she came here she could give no information at all. She stated she came from her home on the South Side. She does not remember being in the Psychopathic Hospital nor that she was in the Receiving Ward before she was sent to the Hospital Ward, where she now is. She states that the last thing she remembers is that she was getting dinner at her home; the next thing she remembers was when she came to herself about three weeks ago in the Hospital Ward. She does not remember ever seeing or hearing any strange things before she came here or all the time she has been here. She does not remember anything; it seems to her she was dead all that time. When asked about her drinking habits she states she never drank any except when the people down stairs once in a while would give her a little whiskey and once in a while she would take more than one drink. The day she lost herself she took three or four drinks. She states she feels fine now, but there must have been something wrong with her mind, for she was just dead for several weeks. Patient gave data of personal identification well. States she was born in Ohio in 1860; is fifty-seven years old; occupation was laundry work. Lutheran. Reached the seventh grade in school. Her father and mother are dead; she has one sister living and one brother dead. She is the oldest child. She was married in 1875 and never had any children. General knowledge: she named the Governor but not the President; she gave Chicago, Baltimore, Cleveland and New York as the five largest cities. She named the Great Lakes and gave a good definition for a President and King; gave the difference between wood and glass. Calculations, however, were poor: 7×6 she gives as 36, and when told it was not correct she gave 54. She gives correctly 5×8 and 8×9 ; knows that $25 - 7$ is 18 but could not give the 7 from 100 test; she gave correctly 6 plus 7 plus 8 and 6 plus 5.

This case and the cases I reported in the ILLINOIS MEDICAL JOURNAL in May, 1922, go to prove that psychosis developing after the use of moonshine whiskey differs materially from psychosis developing after the use of bonded whiskey. The reason more cases are not reported in the literature is because the examiners are classifying them under the old classification. On superficial examination this case may be classified as a Korsakow's syndrome. However, patients

with Korsakow's syndrome do not recover completely without dementia, good insight and suddenly as in this case. Other cases are classified as delirium tremors: however, they differ as I pointed out. In the old delirium tremor cases patients were restless; they either had to be held, restrained or given sedatives. They had an amnesia of short or longer duration, but remembered some of the things they experienced during the delirium which was hallucinosis of sight, hearing and feeling; when they recovered they stated that they had seen or heard different animals like snakes, lions, elephants, etc. They felt as if worms or bugs were crawling on them and they felt after they recovered as if they had undergone a long dream. But when they develop a delirium after the use of moonshine whiskey they either lie quietly in bed or they may perform almost any act and when they recover they remember nothing of what they have said, done nor do they remember having experienced any form of hallucinosis during their delirium. They state they felt as they were dead: when patients developed an hallucinosis after the use of bonded whiskey, it was of the auditory type, as they said they could hear people talk about them, call them names, threatening etc., but could not see them: otherwise they were clear and oriented. But when they develop an hallucinosis after the use of moonshine whiskey it is generally of vision, as they tell us they can see people with clubs trying to strike them or dogs trying to bite them: but they do not hear them, otherwise they are clear and oriented.

In conclusion: Psychosis following the use of moonshine whiskey differs materially of that following the use of bonded whiskey. They can not be attributed to metallic poisons dissolved during fermentation or distillation from the utensils used in their manufacture like lead or copper, as none of these poisons are known to produce the psychosis enumerated, and they must be due to fermentation products other than ethyl alcohol and as such we may yet be able to purify whiskey so as to have the maximum therapeutic effect with a minimum deteriorating effect.

Chicago State Hospital.

GONORRHEA IN WOMEN TREATED BY DIATHERMY

MILNER and MACLACHLAN (Lancet, Sept. 29, 1923) note that the usual condition found on examining a female with acute gonorrhea is that there is a discharge from the urethra and cervix, and that the latter is eroded to a greater or less extent. The discharge from both contains pus and gonococci. From the os uteri the discharge varies; at first purulent, it later tends to become mucopurulent andropy. It is in this condition that one sees most of the cases: and in the subacute or chronic stages when the detection of the gonococcus is very difficult. In an acute case, the treatment of the urethra by lavage, with sounds and urethroscopic treatment to follow, will usually clear up the condition, but at the cervix uteri the latter is very persistent; treatment with the various medicated packs and tampons apparently produces little result, and the condition goes on until the chronic stage is reached, this state of affairs occurring even in cases restricted to bed.

It appears obvious that as heat kills the gonococcus easily in culture, it only requires sufficient heat to kill it in the tissues; as diathermy produces heat to the necessary extent, by this means the cervix can be raised to such a temperature as will destroy the germs without burning the cervix. Georges Luys states that in culture the gonococcus can grow between 32° and 38° C., and that six hours at 40° will kill it.

Experiments carried out at the Military Hospital, Rochester Row, demonstrated that half an hour at 104° F. (40° C.) is a lethal dose for the organism. A minimum temperature of 104° F. is necessary, and it must be maintained for about an hour. These conclusions were arrived at in the treatment of men. The intraurethral temperature of both the anterior and posterior urethra was taken every five to ten minutes, and in cases in which gonococci disappeared and were cured the temperature of every part of the urethra was not on an average maintained at 104° F. for longer than one hour.

In order to follow the technique of the treatment it is necessary to understand the physical properties of diathermy, and to dissociate it entirely from conducted and radiated heat. It would be impossible by conducted heat to maintain the temperature necessary to effect a cure in the submucous tissues which have been penetrated by gonococci without burning severely the superficial columnar epithelium. By diathermy the superficial and deep parts can be equally heated; for it is penetrating, it passes through and through from one electrode to another, and is therefore ideal for the purpose. The amount of heat generated and maintained in any part under treatment does not entirely depend on the amount of current used, but on several other factors, one of the most important being the vascularity of the part. The more vascular the part the quicker the heat is carried away. The part of the body between the diathermy electrodes may be compared to the furnace of a radiator system.

It will be realized that any technique that retards

the flow of blood through the part treated will raise the temperature of the part; this may be done by pressure of the electrodes, or compression of the vessels above or below the electrodes. The size of the active electrode exerts a powerful effect on the local temperature.

The two electrodes used in the treatment are of different sizes, the larger being the indifferent, while the smaller is the active electrode; the smaller the active electrode the greater is the concentration of heat around it. By reduction of the size of the active electrode a stage is finally arrived at when coagulation of the tissues takes place around it. The diathermy then becomes surgical. A cylindrical electrode three-quarters of an inch long and one-eighth of an inch in diameter, with rounded end, will be found the most convenient active electrode to use when the disease is a gonorrheal cervicitis and endometritis. The circular discs should vary in size; the largest size that can be introduced through the speculum should be used.

The patient having already been douched and placed on the couch in the lithotomy position, the indifferent electrode measuring 20 x 10 cm. is wrapped in a thick pad saturated in hot saline solution, and fixed by means of a binder on the abdomen as near to the pubes as possible. The cervix, os uteri, and urethra are cleansed with swabs. As large a speculum as possible is now introduced.

The active electrode is screwed on to the holder and passed down the speculum; the stem of the active electrode is introduced into the os uteri with care, and the circular disc is then pressed gently against the cervix. Before the current is applied the speculum is slightly withdrawn to avoid contact with the active electrode. No overlapping of the vaginal wall should take place, the circular disc of the active electrode being kept in view throughout the treatment. The current is gradually increased; the temperature which it is desired to maintain is 107° F.

The sensation of heat felt by the patient is not a good guide; the cervix is peculiarly insensitive to heat; a superficial burn may occur without the patient suffering any discomfort. The temperature of the os was taken before the treatment commenced and was found to be on the average 99.2° F. The temperature after treatment of five to ten minutes varied from 102° to 112° F. The ordinary clinical thermometer must register within half a minute, and must be introduced into the os very quickly if the correct rise is to be registered, as the part is so vascular that the temperature drops to normal very rapidly when the current is cut off.

To treat gonorrheal urethritis the indifferent electrode is drawn well down to the pubes; after lavage and swabbing of the urethra an active electrode which consists of a cylindrical metal rod five-eighths of an inch in diameter and of convenient length is introduced to the extent of 2½ inches into the vagina and pressed in an upward direction against the vestibule and urethra. More current will be required than for the treatment of the cervix—usually about 1½ amperes is sufficient to maintain the intraurethral temperature at

106° F. The treatment is given for ten minutes and repeated five or six times, when a cure should be effected. Smears should be taken the day after each treatment. No diathermy electrode should be introduced into the urethra on any account; the necessary lethal temperature can be attained with ease without this expedient, and all chance of a burn of the urethra avoided.

As in the case of the urethra, the duration of treatment to the cervix and uterus should be for ten minutes, provided that the temperature is maintained throughout at an average of 107° F. The results of diathermy are marked; the cervical erosion heals rapidly, the discharge becomes less, and gonococci gradually disappear from the smears. With a continuation of treatment the mucopurulentropy discharge disappears, and quite clear mucous secretion without any gonococci in either smear or culture is then left.

The burn which has been mentioned several times in the course of these observations differs entirely from an x-ray burn, or the burn which originates from the electrode of a galvanic battery. The latter are sometimes most difficult to cure. Most surgeons are now familiar with the wound caused by surgical diathermy. The burn which has occurred in some of the cases is a very superficial surgical diathermy coagulation, and there has been no difficulty, in spite of the previous infection, in obtaining complete healing.

Society Proceedings

ADAMS COUNTY

July 13, 1925—This was a regular meeting of the Adams County Medical Society held at the Hillcrest Sanitarium upon the invitation of Dr. W. L. Calvert. The meeting was preceded by a dinner at 8:15 p. m.

The meeting was called to order by the First Vice-President, Dr. Frank Cohen, with 31 members present.

The following change in the By-Laws was adopted: The Order of Business shall be as follows at the annual and monthly meetings:

1. Call to order.
2. Reading of regular essays and clinical reports.
3. Reading of volunteer essays and clinical reports.
4. Announcements.
5. Reading of minutes of the last regular meeting and of any special meeting, since the last regular meeting.
6. Reports from committees.
7. Unfinished business.
8. Reading of business correspondence.
9. New business.
10. Reading of applications for membership.
11. Report of the censors.
12. Voting of candidates for membership.
13. Report of the officers at the annual meeting.
14. Election of officers.
15. Reading of scientific correspondence.
16. Adjournment.

Dr. C. H. Neilson, Professor of Medicine, St. Louis University, gave an interesting practical talk on the various aspects of the tuberculosis problem. His talk was discussed by Drs. Calvert, Irwin, McReynolds, Swanberg and Beirne. Dr. Beirne made a motion that we extend Dr. Neilson a rising vote of thanks for coming to Quincy to address the Society. Seconded and carried. The Secretary made a motion that the August meeting of the Medical Society be devoted to the annual picnic and that the Entertainment Committee be in charge and that the meeting be held some time during the week of August 10th. Seconded and carried.

Adjournment was made about 10:30 p. m.

HAROLD SWANBERG, M. D.,
Secretary.

August 13, 1925.—This was the annual picnic and was held at Airon Park with the Entertainment Committee in charge. The following guests, Drs. Wolfe, Schauf and Behner of Quincy, Dr. Gaul of Mendon, and Dechow of Kinderhook were present, making a total attendance of 31.

Chicken dinner was served by Clyde Collins, and the day was spent in various types of amusement.

HAROLD SWANBERG, M. D.,
Secretary.

Marriages

JOHN RUSSELL BAUM to Miss Daisy Chishall, both of Chicago, April 5.

IRVIN DAVIS, Belleville, Ill., to Miss Anna Willma Selph of St. Louis, June 21.

LEROY B. ELLISTON, La Salle, Ill., to Miss Ida Wurst of Morton, at Peru, July 9.

ROBERT LEO ELLISTON, La Salle, Ill., to Miss Florence Stunn of Yorkville, at Aurora, July 28.

HOMER JAMES GORDON to Miss Miriam Frumkin, both of Chicago, August 4.

FINDLEY, DAXTON JOHN, Chicago, to Miss Josie Dulaney of Okolona, Miss., August 20.

GILBERT MARTIN LOEWE, Winnetka, Ill., to Miss Alma Meertief Nachman of Montgomery, Ala., May 14.

SHEPPARD REMINGTON, Chicago, to Miss Laura Kalisch of Brooklyn, August 8.

ROYAL WILLIAM RUDOLPH, Chicago, to Miss Bergliot Michelet Smith of Minneapolis, June 29.

AUGUSTUS S. WARNER to Miss Anna May Haury, both of Chicago, June 30.

Personals

Dr. Isaac D. Rawlings has been reappointed director of the state department of health for four years.

Dr. George F. Way has resigned as a member of the board of health of Urbana.

Dr. John C. White, Seatonville, a practitioner for fifty-seven years, has retired to enter the Knights of Pythias' home at Decatur. Dr. White is about 80 years of age.

Dr. Lee Alexander Stone, Chicago, lectured under the auspices of the Illinois Medical Society on "Community Defense" at Colusa, August 9.

Dr. Burt F. Crain, for the last six years on the staff of the Union Hospital, West Frankfort, has resigned and Dr. James E. Williams, Bourbon, Mo., has been appointed to that position. Dr. John C. Black on the staff of this hospital, also recently resigned.

Dr. Truman W. Brophy, Chicago, was awarded the Miller prize for dental research at the International Dental Federation, Geneva, Switzerland, August 3, and was also made an honorary member of the Swiss Odontological Society.

Dr. Allen K. Krause, associate professor of medicine, Johns Hopkins University Medical Department, Baltimore, will give a series of lectures in Chicago, October 1, under the auspices of the Chicago Tuberculosis Institute, one to medical students, another to nurses and social workers, and another to physicians.

Dr. Charles E. Shultz, of Shirley, Illinois, has been appointed as health officer of Bloomington, Illinois, succeeding Dr. Harold B. Wood, who resigned sometime ago to accept a position with the Pennsylvania state department of public health.

Dr. Warner H. Newcomb, for several years health officer of Suffolk, Virginia, has been appointed health officer for Morgan county and also superintendent of Oak Lawn Sanatorium. Dr. Newcomb, a native of Illinois, assumed the duties of his new office on July 15. He succeeds Dr. Thomas A. Mann, resigned.

Dr. A. M. Harvey, Chicago, sailed July 4 with his son A. M. Harvey, Jr., for ten weeks visit on the Continent and England.

News Notes

—The Chicago Tuberculosis Institute comments very favorably on three new laws enacted by the 54th general assembly of the State of Illinois. Two of these relate to milk and one to nursing. Consequently they all have a practical bearing on the work of the Institute and, if rigidly enforced, should be a great help in promoting the public health. One law requires pasteurizing plants to have state certificates. The other milk law provides that municipalities may prohibit the sale of milk from any herd that has not been tuberculin tested. The law that relates to nursing provides that cities may levy a tax for the salaries of community nurses. Such nurses must be properly appointed and their duties prescribed under the law. These laws mean a great step in the progress of the state of Illinois and have long been desired by those interested in it.

—The Children's Memorial Hospital, 735 Fullerton Avenue, has taken out a permit for a five story building, the Martha Wilson Memorial.

—The Chicago Tuberculosis Institute, which has eighteen health centers at which clinics are held, plans now to add to its staff a laboratory diagnostician who will have an office and laboratory at the Oak Park Health Center.

—A chair in the University of Chicago school of medicine was endowed, August 14, with the gift of \$100,000 by Mrs. Anna Raymond. The chair, the selection of which will be left to the discretion of the trustees, will be known as the James Nelson and Anna Louise Raymond professorship.

—The Illinois State Department of Registration and Education closed the "Clark Medical Clinic," 189 North Clark Street, Chicago, August 13, and obtained a warrant, it is reported, for the arrest of "Dr. L. Devereux" who is charged with practicing medicine without a license. It is said that Devereux was posing as a French specialist and was obtaining from \$20 to \$100 for treatment.

—Among the appointments announced by the University of Chicago are those of Drs. George M. Curtis and Lester R. Dragstedt to be associate professors of surgery, Lieut. Col. Junius C.

Gregory, U. S. Army, retired, to be assistant clinical professor (military medicine) in Rush Medical College, Dr. Charles Philip Miller, Jr., of the Rockefeller Institute for Medical Research, New York, assistant professor of medicine, and Dr. Chester M. Van Allen, assistant professor of surgery.

—The state department of health has completed arrangements for issuing certificates of approval to diagnostic laboratories that do work which pertains to public health. To be eligible for a certificate of approval, the laboratory must be personally inspected by an agent of the state department of health and meet certain requirements as to equipment, personnel and character of work undertaken. The inspections for certification will be made only on request, and the certified laboratories will be required to perform tests on specimens furnished by the department from time to time. This undertaking is purely voluntary, there being no law that requires it.

—Under the auspices of the Morgan County Medical Society, a centennial celebration was held at Jacksonville, August 13. There was a picnic luncheon on the Illinois College campus, where a marker was dedicated to the first medical school in the state. Dr. William Allen Pusey, Chicago, formerly President of the American Medical Association, gave an address. A marker was also dedicated on the home site of the first physician in Morgan County, 6 miles west of the city, and a marker was dedicated in honor of the first physician in Jacksonville at the site of his home and office. Dr. George W. Crile, Cleveland, gave an address at the dinner held at the Country Club in the evening.

—The Chicago Medical Society *Bulletin* says that a so-called medical association is trying to sell stock to physicians with the idea that they will be employed to care for patients which the association may contract to attend. This organization claims, it is said, to be able to get in touch with large organizations and to contract to care for large numbers of people at so much monthly per member or family. There is another scheme doing about the same thing for 75 cents monthly for the whole family. This organization is appointing physicians in various districts to take care of its members on a schedule basis. The *Bulletin* cautions physicians to look into these organizations before making any alliance. Phy-

sicians who call in person at the offices of the Chicago Medical Society will be given information confidentially regarding these "new organizations."

—The executive director of the Chicago Lighthouse requests physicians to refer to that institution blind people who need its help. The lighthouse conducts workshops at 3323 West Twenty-second Street under regular factory conditions where the blind are trained in industrial occupations. They receive this training without expense. The work includes typing, piano tuning, dictaphone operating, mechanical assembling, folding, packing, sorting, stacking, and wrapping of articles weaving on hand looms, and other work. The work is identical with that which will be required of them in factories in which they will be helped to find positions. The best time to refer persons to the lighthouse is when their blindness is impending or soon after they have become blind. Later they lose courage, and it is difficult to regain their self-confidence.

Deaths

GEORGE CHRISTIAN AMERSON, Chicago; Chicago Homeopathic Medical College, 1902; College of Physicians and Surgeons, Chicago, 1904; a Fellow A. M. A.; formerly professor of surgery, Chicago College of Medicine and Surgery, and clinical professor of surgery, Loyola University School of Medicine; served in the M. C., U. S. Army, in France, during the World War, aged 47; died, August 7, of pernicious anemia.

HAYDEN SUFFIELD BARNARD, Chicago; Rush Medical College, Chicago, 1889; a Fellow A. M. A.; aged 58; died, August 2, of myocarditis.

ALFRED J. BAXTER, Astoria, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1880; aged 70, July 10, of chronic nephritis.

GUSTAVUS FREDERICK BERGER, Chicago; Rush Medical College, Chicago, 1897; a Fellow A. M. A.; aged 58; died, August 4, of angina pectoris.

ROBERT EMMETT CLANCY, Cairo, Ill.; University of Louisville (Ky.) School of Medicine, 1891; aged 56; died suddenly July 22.

BENEDICT EINARSON, Chicago; University of Michigan Homeopathic Medical School, Ann Arbor, 1882; a Fellow A. M. A.; College of Physicians and Surgeons, Chicago, 1890; on the staff of the Englewood Hospital; aged 70; died, July 25 of cerebral hemorrhage.

GEORGE MARION FRENCH, Springfield, Ill.; College of Physicians and Surgeons, Chicago, 1901; medical director of the Springfield Life Insurance Company; aged 45; died, August 12, at St. Luke's Hospital, Chicago, of peritonitis.

OSCAR N. GIBSON, Eldorado, Ill.; Miami Medical College, Cincinnati, 1887; aged 65; died suddenly, July 6, at Galatia, of cerebral hemorrhage.

JOHN EWING HAUGHEY, Rockford, Ill.; Rush Medical College, Chicago, 1891; a Fellow A. M. A.; on the staff of St. Anthony's Hospital; aged 62; died, July 6, of carcinoma of the stomach.

JAMES E. INSKEEP, Mount Carmel, Ill.; Eclectic Medical Institute, Cincinnati, 1877; county coroner; aged 73; died, July 9, following a long illness, of diabetes mellitus.

LEO J. KELLY, Joliet, Ill.; Illinois Medical College, 1906; aged 42; died, July 31, at St. Joseph's Hospital, following an operation.

LAWRENCE HOWARD ROBLEE, Chicago; University of Michigan Homeopathic Medical School, Ann Arbor, 1912; a Fellow A. M. A.; served in the M. C., U. S. Army, during the World War; consulting urologist to the Illinois Masonic Hospital, where he died, July 24, of chronic interstitial nephritis, aged 37.

WILLIAM H. F. SMITH, Chicago; Rush Medical College, Chicago, 1884; a Fellow A. M. A.; aged 79; died, May 25, of myocarditis.

ROBERT EDWARD STEVENS, Rochelle, Ill.; College of Physicians and Surgeons, Chicago, 1904; a Fellow A. M. A.; past president of the Ogle County Medical Society; formerly health officer of Rochelle; served in the M. C., U. S. Army, during the World War; aged 46; died, July 11, at the Lincoln Hospital, of peritonitis, following an appendectomy.

GEORGE FRED SUTHERLAND, Chicago; Rush Medical College, Chicago, 1920; a Fellow A. M. A.; clinical associate in pediatrics at his alma mater; member of the Chicago Pediatric Society; on the staffs of the Chicago Memorial Hospital and the Presbyterian Hospital, where he died, August 16, of ulcerative pharyngitis, phlegmon of the neck, and bronchopneumonia; aged 33.

EDWARD ESTLE TRUITT, Maquon, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1883; aged 66; died, August 4, in a hospital at Galesburg, of a poison, presumably self-administered.

WILLIAM ALLEN BARR, Paris, Ill.; Rush Medical College, Chicago, 1892; aged 67; died, July 18.

WILLIAM A. SYNON, Platteville, Wis.; Rush Medical College, Chicago, 1882; aged 69; died, July 14.

PHILIP D. B. GRATTON, Galatia, Ill. (licensed, Illinois, 1877); died, July 6.

WESLEY ALFRED KOCH, Pekin, Ill.; College of Physicians and Surgeons, Chicago, 1901; Spanish-American War veteran; aged 48; died, July 22, at the Peoria (Ill.) State Hospital.

ILLINOIS MEDICAL JOURNAL

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contracted by the Committee. Notify the Chairman at once.
Do not employ attorneys.

Send original articles and all communications relating to
advertisements to Dr. Charles J. Whalen, Editor, 6221 Ken-
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Membership correspondence to Dr. Harold M. Camp, Mon-
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Society proceedings and news items and changes in the
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Editorial

CHICAGO, THE MEDICAL CENTER OF THE WORLD

The Chicago Medical Society has the oppor-
tunity of a lifetime at hand. If taken by the
proverbial fore-lock the city can be made the
medical center of the world.

Work qualifying the city and its environs for
this distinction is performed hourly all about us.
Neglect to let others know of our capacities and
performances will result in Chicago's slipping
into a mere sub-station for outlying physicians
to come for post-graduate labors. Instead of
being the medical center of the world, Chicago
will soon cease to be even a rival for this
supremacy in the United States, unless some
action is taken.

The Chicago Medical Society should assume
responsibility of cooperation and organization
between the profession, the schools and hospital
and affiliated institutions to the end that this
compact unit will be a foreful lever to bring
about the "rendering unto Caesar of the things
that are Caesar's."

Chicago should be the logical city for visiting
physicians to come for supplemental study. The
population is large. The city is beautiful.

There are three large medical schools with a
wonderful competent and efficient teaching staff.
Here are all the ingredients. What is needed is
the mortar and pestle to mix them.

It would seem feasible for the Chicago Medi-
cal Society to advertise in the Journal of the
American Medical Association that visiting
physicians will be welcomed from everywhere,
and that the Chicago Medical Society will assist
such visitors with their post-graduate work. Also,
receipt should be had through the offices of the
society of notices of all clinics, of all work being
done in colleges, in hospitals and in private
clinics, so that this information might be bulle-

trained for the out-of-town doctors and for members of the local society.

Co-operation from the institutions and the individuals, if organized and distributed properly, will go far towards placing Chicago at the head as a teaching center.

Another progressive step would be the organization by the Chicago Medical Society of the professional labor done in Chicago so that our own members would have opened to them diagnostic and treatment clinics as well as especial clinics. In this way Chicago physicians themselves will build up even better physicians and surgeons.

This, when analyzed, would appear to be indubitably the inevitable and only way in which to overcome the propaganda of various cults and isms, and the so-called practitioners of bloodless surgery and medicine.

Along with post-graduate work there would run a bi-monthly diagnostic clinic held on the south, the west and the north sides of Chicago under the auspices of the Chicago Medical Society. Our members would gain greatly therefrom.

It rests with Chicago to put this great undertaking where it belongs on a plane of established success that will make Chicago a Medical center of admiration for the whole world.

These views are expressed for the purpose of creating discussion with the possibility in view that good may arise therefrom. Will those who are interested in the idea please place themselves on record by comment either favorable or otherwise?

STATE PRE-EMPTION OF PROFESSIONAL PRIVILEGES AND ECONOMIC FACTORS AFFECTING MEDICAL EFFICIENCY

Paternalization and Sovietization of the country will come at a rapid rate and submerge the United States with the overthrow of the republication form of government and its replacement with a soviet despotism or political paternalistic machine if it is passed as is advocated in the national legislature and in various state legislatures. The Harrison Drug Act was the opening wedge and the gash has been followed up with excellent soviet leverage for paternalistic control. New York state has had the bitterest fight because the fight was waged most openly. En-

couragement there lured the bolshevists to transfer activities to Washington. There the situation gets dangerous. The aim of the uplift propagandists and payroll brigadiers is to deprive the individual of his individuality and to turn his personal privileges into communal joy ride. The state steps in and makes of itself, father, mother and Babe Belle of every household. The church is a bad place for the bolshevists to start his debauchery. The church deals with the spirit. But as medicine stands next to the church, as medicine deals with the body and as bolshevism stands rooted in the physical, with sensuality one of its illy masked mainsprings, what more than that bolshevism should strike through man's tenderest spots, his mortal ailments. The ancient euthanasiasts have nothing on the bolshevist.

The first step in this insidious campaign has been to lure the state into pre-empting professional privileges. In other words, telling the doctors how to care for the sick; in other words—though it has not come to this openly yet—let us suppose Peter Pinker has the stomach ache; he needs Epsom salts and mustard plaster. But when Dr. Smith starts to prescribe this he finds he cannot. Mustard plasters beget a desire for heat when you are cold. Epsom salts are habit-forming—by their use constipation is induced. So Peter cannot have his plaster nor his physic. There is a statute against it. That statute was lobbied through an apathetic legislature by Tom Tuttle who made his money in shady hotels and saloons; George Gettit, who has wealth from a loan bank, and Martin Mettel, who wants to be Senator next year and has grabbed up all the traction systems between Chicago and Cairo. Peter can't have his physic but he can go home and go and have a nice nurse sent to him by the state bureau and the nurse will tell him to swallow pink tea and rub his feet. She knows more than the doctor does anyway because she only studied two years and the doctor studied for ten years and he got tired remembering long before he did. Furthermore Peter won't have to pay for his nurse. But a woman who scrubs floors down in the Ghetto and a stenographer with a mother and a little sister to support and all of them need shoes and a man with a sick wife, who lives in Decatur will all chip in and help pay the tax that pays the nurse who takes care of Peter and keeps him away from his physic and his plaster. All of which sounds like Billy Sunday

on the rampage. But it is not. Rather, merely a direct visualization of what is coming to the citizenry and the physician if state medicine, compulsory health insurance and all the rest of it is dosed out to a suffering community of tax payers. Look at legislative records and learn a little bit about what is going on.

Already the state is running venereal disease clinics. There men who are unable to pay for this expensive but necessary treatment and pauper women of ill-balanced moral sense are relieved of their menacing attributes towards the community. The medical grafter who is the bane of all clinics because he could pay if he would, but prefers to get his health at the expense of somebody else, can get rid, without financial trouble, of the results of vice for which he probably did pay a good round sum to some light o' love in a red light resort. The state is putting a premium on vice and taxing the innocent to pay for it.

The state of course would be busied if it would tend to its own dooryard and let professional privileges of the individual alone. Surely a man who gives his life to his profession deserves the right to get a living wage from his skill instead of being a pre-empted claim for the political appointee.

However, when state business runs slack the professional politician can pauperize and bring under his thumb an educated class when he systematically undermines the sources of revenue of the legitimate doctors whether by state gratuities or by the admission to fields of medicine of such fakes as chiropractics, naprapaths, osteopaths and all the rest of the unlettered but shrewd dollar-chasing crew. False hopes and fairy tales are best with the uplifters. "It is natural for man to indulge in the illusions of hope," so says Patrick Henry. The fakes hand out plenty of hope built on illusion of many colors. They weave the rainbow and find the pot of gold at the end of their patient's pockets, and a prosecuting attorney hates worse than poison to mix up with 'em.

Doctors of course could fight the politicians and get a little self-protection if they would organize as the fakes do. Get down to the records of the Constitutional Convention held in Springfield, Illinois. Look at the statute books and see how charlatans are encouraged, nurtured and pampered by the same commonwealth that has rules, regulations and don't-you-dares that cause

a legitimate honest physician to thank Heaven that he is permitted to chew food with his own teeth.

ENORMOUS INCREASE IN HOSPITALIZATION A MENACE AND INJUSTICE TO THE SICK

ANOTHER LOOP-HOLE BY WHICH STATE MEDICINE CAN ENTER THE BODY CIVIC

Ease of hospitalization leads doctors to nurse still another vicious circle of influences tending to pave the way for the encroachments of state medicine.

So great has been the increase in hospital charges that for the patient of moderate income an illness of two weeks' duration is about as long as he can pay for. Ultimately this condition will engulf the profession. From seventy-five to eighty-five per cent. of the ailments of the human race are of a minor nature.

For such afflictions people look for medical attention in their homes instead of at institutions and this is the proper perspective.

Any attempt to evade home care for this proportion of less serious illness is direct nourishment for the already too generous growths of cults and 'isms. *Further it drives the sick to seek state aid*, and plays the handmaid for the establishment of state medicine.

Charges for drugs and accessories, comparatively large though they be, are as nothing in the face of hospital expense. Reviewing the record of a few short years brings an appalling survey.

Take for instance one New York hospital, where in 1913 the charge for the operating room was \$3. In 1922 the cost had increased to \$15 while the special nurse's fee was \$70 weekly, exclusive of her board bill of \$14 weekly. In another hospital the price increase from 1912 to 1922 was from \$5 to \$15 for the room and from \$25 to \$70 for the nurse. The gist of the matter has well been said to be that regardless of social or financial standing the unfortunate sick person must pay \$35 and upwards for a fair private room, \$50 to \$70 for a special nurse, \$15 for the operating room, and \$10 to \$14 for board, or a total of \$134 for the first week's service, which, if matters go well, may be reduced for the second week to \$119. Such expense spells disaster for the average citizen.

Here is where the astute physician steps in, and even with entailed extra inconvenience for

himself, such as preparation of dressings and similar supplies at home will make this sacrifice for the sake of the patient's well-being.

As the patient is often too proud and too sensitive to speak of such things, suffering from such a financial onslaught actually augments the invalidism.

In the federal public health service the cost per patient for hospital attention is approximately four dollars per day and in civilian institutions the cost is from six dollars per diem to \$50 per week, with an extra \$50 perhaps for a special nurse, and still extra fees for laboratory services.

All this before the physician receives any money. Small wonder that "new thought" and "Eddyism" or "electrocute yourself at home" grows more popular daily.

There is only one other alternative. This is to patronize the institutions supported by the tax-payers, and to make the citizenry feel that *cost of illness should be borne by the state.*

A heavy price, is it not, to be paid for the power and glory of the name of being so busy a doctor as to keep "a hospital filled with patients." Some doctors have this error in their ways. Better less self-exploitation through a hospital corps of patients, and a firmer hold upon the genuine needs of the vast majority of the people. For some illnesses nothing compares with hospitalization. To demand this expensive treatment for minor ailments is ridiculous and dangerous.

DOCTORS WHO SERVED ON EXEMPTION BOARDS IN WORLD WAR

ATTENTION—ILLINOIS DOCTORS

After a year's effort through military channels, both in Springfield and Washington, the Committee on Medical History of the Illinois State Medical Society has succeeded in getting what purports to be a list of the physicians that served on the various exemption Boards.

Investigation shows many errors in the personnel of the Boards, and in order to have the data as accurate as possible for the forthcoming issue of the Medical History we are asking that every physician that served on the Exemption Boards, Appeal Boards, etc., during the late War, send their name, address and the number of the Board on which they served, to Colonel P. J. H. Farrell, Committee on Medical History, 25 E. Washington Street, Chicago, Illinois.

SUBSCRIBERS TO THE LAY EDUCATIONAL FUND

Since the September issue of the Journal was published, the following doctors have subscribed to the Lay Educational fund:

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E. H. Marshall, Clinton.

E. P. Spitze, East St. Louis.

Wm. E. Walsh, Morris.

Subscriptions thus far received have been directly acknowledged by the Lay Educational Committee, as well as by publication from month to month in the Journal. In the future only the previous month's subscriptions will be acknowledged in the Journal.

MAKE CHECKS PAYABLE TO THE ILLINOIS STATE MEDICAL SOCIETY

Name.....M. D.

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Sign the above pledge card, make out a check payable to the Illinois State Medical Society and mail both in an envelope addressed as follows:

From

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ILLINOIS STATE MEDICAL SOCIETY,
c/o Cashier, Sheridan Trust and Savings Bank,
4738 Broadway, Chicago, Ill.

Below is a list of subscribers from Chicago and Cook County to the Lay Educational Fund as per letter sent physicians early in April soliciting funds and cooperation.

GETTING OUT THE JOURNAL

Getting out a bulletin is no picnic.

If we print jokes, people say that we are silly.

If we don't print them, they say we are too serious.

If we print original matter, they say we lack variety.

If we publish things from other papers, we are too lazy to write.

If we stay on the job, we ought to be out hustling news.

If we are hustling news, we are not attending to business in our own department.

If we don't print all contributions, we don't show the proper appreciation.

If we do print all contributions, the paper is filled with junk.

Like as not some one will say we swiped this from an exchange. So we did.

AMERICAN COLLEGE OF RADIOLOGY AND PHYSIOTHERAPY

HOTEL LA SALLE, CHICAGO

OCTOBER 19-22, 1925

PRELIMINARY PROGRAM

Monday, October 19, 1925

CLINICS

Wesley Hospital—

"Industrial Physiotherapy"...Paul Magnuson, M.D.

Cook County Hospital—

"General Physiotherapy".....J. S. Coulter, M.D.

"Electrocoagulation of Malignant Tumors".....

.....Frank J. Novak, Jr., M.D.

"General Physiotherapy".....Disraeli Kobak, M.D.

American Hospital—

"Cancer Clinic".....T. Howard Plank, M.D.

Hollender and Cottle Clinic—"Physiotherapy in
Eye, Ear, Nose and Throat Practice".....

A. R. Hollender, M.D., and M. H. Cottle, M.D.

Tuesday, October 20, 1925

Registration

Business Session

Presidential Address—"The Past, the Present and
the Future"—Curran Pope, M.D., Louisville, Ky.

"Status of Radiotherapy in Otolaryngology,"

Ira O. Denman, M.D., Toledo, Ohio, Otolaryn-
gologist.

"Radium Therapy,"

C. W. Hanford, M.D., Chicago. Consulting Ra-
dium Therapist Cook County Hospital.

"Radiation Therapy,"

J. R. Ranson, M.D., Denver Colo. Formerly Con-
sulting Physician Colorado Radium Company."The Radiological Diagnosis of Early Pulmonary Tu-
berculosis,"Roland G. Breuer, M.D., Norton, Kans. Assist-
ant Physician Kansas State Sanatorium for Tu-
berculosis.

"Artificial Light Therapy in Tuberculosis,"

Edgar Mayer, M.D., Saranac Lake, N. Y. Phy-
sician Saranac Lake Sanatorium for Tuberculosis.

"Quartz Light Therapy in Otolaryngology,"

Roy A. Barlow, M. D., Madison, Wis. Otolaryn-
gologist University of Wisconsin.

"Water as a Therapeutic Agent,"

Charles E. Stewart, M.D., Battle Creek, Mich.
Physiotherapist Battle Creek Sanitarium."Therapeutic Exercise—A Neglected Method in Phys-
iotherapy,"J. C. Elsom, Madison, Wis. Physiotherapist Uni-
versity of Wisconsin.

Tuesday, October 20, 1925

EVENING SESSION

Subject to be Announced,

W. T. Bovie, Ph.D., Professor of Biophysics Har-
vard Medical School.

Fellowship Gathering and Smoker.

Wednesday, October 21, 1925

"Diathermy in Gonorrheal Diseases of the Male,"

Damon Brown, M.D., Madison, Wis.

"Diathermy in Gynecology and Genito-Urinary Prac-
tice,"B. H. Hager, M.D., Madison, Wis. Urologist,
University of Wisconsin.

"Diathermy on Medical Kidney Disease,"

Gustave Kolischer, M.D., Chicago. Associate Pro-
fessor Genito-Urinary Diseases. Post Graduate
Medical School."Bladder Tumors as Treated by Thermo-Electric Co-
agulation,"B. C. Corbus, M.D., Chicago. Inventor of Ther-
maphore for Treatment of Endocervicitis by Dia-
thermy. Author of Book on this Method of
Treatment.

"X-Ray Therapy Twenty Years Ago,"

William Allen Pusey, M.D., Chicago. Past Pres-
ident American Medical Association. Professor
of Dermatology, University of Illinois Medical
School."Newer Methods in the Treatment of Defective Hear-
ing,"

M. H. Cottle, M.D., Chicago.

"The Use of the High Frequency Currents from the
Surgeon's Standpoint,"

A. David Willmoth, M.D., Louisville, Ky.

6:30 P. M.

Annual College Dinner—Educational Program,

Wm. Allen Pusey, M.D., Past President Ameri-
can Medical Association.Maurice Fishbein, M.D., Editor Journal Ameri-
can Medical Association.D. J. Davis, M.D., Professor Pathology and Bac-
teriology, University of Illinois Medical Col-
lege.

Thursday, October 22, 1925

"Diathermy in Infections,"

W. B. Chapman, M.D., Carthage, Mo. Vice-Presi-
dent American College Radiology and Physio-
therapy."The Treatment of Non-Union or Delayed Union of
Bone and Bursitis,"F. B. Granger, M. D., Boston, Mass. Radiologist
and Physiotherapist, Boston City Hospital.

"Observations on Physiotherapy Abroad,"

Disraeli Kobak, M.D., Chicago. Attending Phys-
iotherapist Cook County Hospital.

"Electrothermic Methods in Surgery,"

Wm. L. Clark, M.D., and H. H. Bass, M.D.,
Philadelphia, Pa. Dr. Clark is a pioneer in the
use of electrocoagulation in surgery.

"Endocrines and Physiotherapy,"

Maxmilian Kern, M.D., Chicago. An internist of
wide experience in endocrinology.

R. W. Fouts, Secretary, Omaha, Neb.

LAWLESS LAW ENFORCEMENT

Recently the collector of internal revenue at Nashville refused to register under the Harrison Narcotic Act twenty-five physicians who were under indictment for alleged violations of it. In 1922 a court of competent jurisdiction decided that a collector had no right to refuse registration under such circumstances, and the Bureau of Internal Revenue took no appeal from that decision. At that time the United States District Court for the Northern District of Georgia* thus disposed of the collector's claims:

"But to prohibit a practicing physician from prescribing narcotics unless he registers, and then to refuse to register him, would, to that extent, be to prohibit and regulate his practice of medicine, a thing within the province of the state, and not of the United States, and in contradiction of the revenue purposes of the act. . . . The determination of who may properly practice medicine or otherwise dispense drugs belongs to the agencies of the state. The collector must register on proper application all who are by the state law permitted to dispense them. He has no discretion in the matter."

In the present instance, the United States District Court of Nashville promptly arrived at a similar conclusion and directed the collector to register the Tennessee physicians. For the trouble, expense and undesirable publicity incident to the court proceedings, however, these physicians have no redress. Available reports do not disclose the nature of the offenses with which they were charged, the character of the evidence on which they were indicted or their professional standing. Their guilt or innocence can and should be promptly settled in an orderly course of judicial procedure. If they are convicted, lawful penalties can be enforced. But as was made perfectly clear by the court in the Starnes case cited, and as should have been known to the collector of internal revenue at Nashville, these matters have nothing to do with registration under the Harrison Narcotic Act. Referring to an order issued by the Commissioner of Internal Revenue to withhold registration from indicted or convicted persons, in that case the court said:

"The instruction of July 26, 1921, was not made by 'the Commissioner of Internal Revenue with the approval of the Secretary of the Treasury,' and so (was) not authorized by the act; but, if it were, in attempting to make a pending charge of crime a ground for refusing registration, it would be unsustainable. Even after the conviction, to do so would add a deprivation of vocation to the punishment fixed by law. Prior to conviction there is only an accusation of which the registrant is presumed to be innocent."

The decisions of the courts in the Georgia and Tennessee cases do not leave collectors of internal revenue helpless. They merely refer them back from lawless methods to lawful ones. If a collector has evidence that a physician has violated the Harrison Narcotic Act or the narcotic act of any state, he can institute prosecution in the proper federal or state courts. If a col-

lector has evidence that a physician is unfit to practice medicine, he can file complaint with the licensing board of the state by which that physician was licensed. If the collector regards these measures as inadequate, he can appeal through proper channels to the proper legislative bodies to amend or supplement the Harrison Narcotic Act or the medical practice or narcotic acts of the state.

The law, however, does not authorize a collector to use his own judgment to remedy what he may regard as defects in federal and state legislation. Such a procedure is not merely a trespass on the rights of the physician; it is an attempt unlawfully to infringe on the constitutional rights of the state itself. Such occurrences tend to break down the harmonious relations between the federal government and the states and to increase the odium already attached to the word "bureaucracy." The Harrison act penalizes the physician who fails to conform; what redress does it offer him when he loses time, money or professional standing through the misguided autocratic methods of those whom the government selects to enforce it?—*Jour. A. M. A.*, Aug. 29, 1925.

COMMUNIST CORRUPTION OF CHILDREN

The following extracts are from "*Manual for Leaders of Children's Groups*," by Edwin Hoernle, published by the Executive Committee of the Young Communist International:

"The Communist Children's Groups must be neither party kindergartens nor children's homes. They must be live organizations of the children of the workers, organizations to counteract the poison of bourgeois 'education.'"

"The first essential in the work of the groups is the confidence of the children in the leaders. Without this the work will be hindered by the egotism and stubbornness which have been fostered in the children by the bourgeois schools."

"How can we arouse and develop this spirit of simultaneous independent initiative and communist solidarity?"

"The organization and leadership of the children's groups is a task belonging particularly to the Young Communist League."

"(a) They adapt themselves more easily than the adults to the peculiar features of the children's psychology.

(b) They are not so much inclined to the 'non-political and humanitarian' as are the adults.

(c) They understand better than the adults how to build up the activities of the Communist Children's Groups so that these become natural preliminary stage of the Young Communist Leagues, preparing the children to enter the League."

"We assert that the formation of the Communist Children's Groups is not primarily a problem of pedagogics. It is a question of the class struggle, a political task, a struggle to liberate the proletarian child from the mental servitude imposed upon him by capitalism;

**Starnes v. Rose*, Internal Revenue Collector 282 Federal Reporter 336.

it is the enrollment of the child into the ranks of the revolutionary working class."

"The first requisite is that the education shall be revolutionary and of a communist nature. We have—and we say it with pride—in the Young Communist Leagues communists in the best sense of the word, and being communists they are naturally better qualified to conduct this work of communist education."

"HOW DO WE BEGIN?"

"Nothing in the world is easier than to attract children. Where there is a will there is a way. Youths, boys and girls of the Young Communist Leagues, go in a group to the places where children are—on the streets in the evenings, in parks, public playgrounds, or at some outdoor celebration. They watch the children at play and gradually and tactfully join in their games, perhaps teaching them a new circle game which all can join. Other children are attracted and approach to play the new game. After a time when the children are a little tired—'Shall we learn a new song?' At first the little ones may be suspicious, then they will be shy, but eventually they will all join in 'The Red Flag,' 'The International' or some other revolutionary song.

"Or else—'Will you play with us again? We poor children have to do without so many things the rich children have—it is so nice when we can all play together.' Meanwhile we can distribute our papers, inform them that this is the children's paper and that there are children's meetings. 'Would you like to come?'"

The pamphlet goes on telling how to excite envy and giving examples of types of mendacious suggestions that they think will be influential with the children, and adds:

"Thus we neither 'teach' them Communism nor ask them to learn ready-made lessons—we only lead and inspire them so that they become communists of their own accord. For children can be communists! The distribution of their paper among other children is communist propaganda—sometimes even a militant activity."

"Blind respect for the adults is one of the first things to be removed in communist education.

"There will be another storm of indignation over this. 'The Communists want to destroy the home sweet home and the relations between parents and children.' As if any such thing as a real home existed in the working class! The family as 'home sweet home' was long ago abolished by capitalism. The proletarian family is nothing but a common household for eating, sleeping and living."

Then on page twenty-two and twenty-three follow instructions of how to incite children against their teachers and parents; of how to make them rebels against authority and to get other children to support them in their rebellion; of how to get them to support any normally unfit teacher who is dismissed for cause, etc. Then on page twenty-six:

"We are not dispensers of 'sweetness and light' to the unhappy and the suffering children of the proletariat. On the contrary, we seek to arouse and waken

their class consciousness and their revolutionary instincts. We meet the immediate demands of the children for clothing and food with the formulated demand: Compulsory free meals for school children! Compulsory free clothing for school children!"

And on page twenty-seven the pamphlet states that children are to be told that religion is the tool of the rich against the poor and explains how to bring religion into contempt without logical opposition to it. After that, under Communist games, etc., it explains how children's play can be used as instruction in Communist methods—how their games can be games in evasion of law and in law defiance and adds:

"The Communist Children's Groups are a class organization, and they do not pretend to be anything else, existing for the purpose of training the children for the class war."

Then on page thirty-nine, speaking again of games:

"Hide and seek can be made a game dealing with illegal communist work; Comrades crossing a frontier with literature without being caught; The Fixing of Posters without being detected; Escapes from prison, and such other things as the leaders may find to interest the children. The older children will enjoy staging a scene from the fights of the Russian Red Army, in which some of them take the part of the White enemies; or scenes from the French revolution, or from the Chartist movement in England."

"When the children grow tired and want to rest from these vigorous activities they will enjoy listening to bits of history of the struggle of the working class, stories of the illegal work of the communists, the escapes of revolutionists, or stories of their capture."

The pamphlet continues and adds: "Let us rid ourselves of all pacifist nonsense and sentimentality."

Thus the children are to be made Communist agents in the Communist striving for civil war and the overthrow of our country and civilization by force.

And yet many pacifist organizations play the Communist game, endeavoring to bring about that complete disarmament and physical helplessness which the Communists so much desire as the necessary step in their seizure of power for themselves and the erection of their own dictatorship in the place of orderly and representative government.

FRANCIS RALSTON WELSH.

RADICAL WOMAN ON LEAGUE COMMITTEE

Eleanor F. Rathbone, one of the authors of the vicious, Socialist, "Endowment of Motherhood" book which was exposed and denounced on the floor of the United States Senate, June 29, July 21 and July 23, 1921, and who was made chairman of the standing committee on "Maintenance of Motherhood and Treatment of Illegitimate Children" of the International Woman Suffrage Alliance, in November, 1920 (two weeks before the great American woman's drive, led by Mrs. Florence Kelley, Socialist, translator of Marx and Engels, etc., for the Maternity Act), has been appointed as a "representative of women" on the League of Nations Advisory Committee on Traffic in

Women and Protection of Childhood! What a combination!

The *Woman Citizen*, April 18, 1925, rejoices in the appointment of this extreme radical as follows:

"The great international organizations of women are happy over their success in getting a representative on the League of Nations Advisory Committee on Traffic in Women and Protection of Childhood—the half-old, half-new committee set up at the last Assembly. The women's organizations . . . considered it peculiarly fitting that they should be allowed to choose some one to represent the most fundamental concern of women—children's welfare. On this point, the women won, and Miss Eleanor Rathbone has been appointed—a nominee of the International Council of Women, the International Woman Suffrage Alliance, the International Federation of University Women, the International League for Peace and Freedom, and the World's Y. W. C. A. More and more the influence of these international women's organizations is being recognized. It is a fine thing for the world to have the conscience of its best womanhood organized and effective."

And thus is celebrated the appointment of one of the most radical women on earth—a woman who believes in *government* "maintenance of motherhood," and in wiping out the distinction between legitimate and illegitimate children—to a position of world influence!

The Rathbone book, "The Endowment of Motherhood," is exceeded in its radicalism only by Alexandra Kollontay's "*Communism and the Family*." It not only advocates *substitution of the State for the father* in the maintenance of mothers and children, and sneers at the father "*as a middleman*," but it proposes to put mothers "on the pay roll of society" so that *strikes* can be carried on more effectively—by irresponsible men—and to promote the "*socialization of industry*."

Under the sentimental cover of the pretty title, "The Endowment of Motherhood" (published by B. W. Huebsch, New York, 1920), is the most brutal doctrine of Communism and Socialism—socialization of motherhood and childhood.

Among other equally radical doctrines in "The Endowment of Motherhood" are these:

"If mothers are going to get on the pay roll of society at all they will have to be willing to begin at the bottom.

"In the event of wage disputes the workers will know that a large number of their dependents are secure and that the call on *strike* funds will be less. . . .

"Family endowment would be of immense advantage in the struggle for higher wages. . . .

"To those who are looking to the *socialization of industry* in one form or another, we would point out that a scheme such as the one advocated here will be found essential.

"The State will have to deal increasingly with the mother directly and less through the agency of the *father as a middleman*."

This radical book was enthusiastically reviewed under the title, "Wages for Mothers," in the *Suffragist*,

November, 1920, but American enthusiasm for the doctrine was considerably dampened (*or at least concealed*) after the demonstration in the Senate, by Senator James A. Reed, in June and July, 1921, that it was "*the essence of Communism*." It should be stated here that Senator Reed *was speaking on the Maternity Act*, and of course his opposition to the League of Nations had nothing to do with his criticism of that doctrine, as he had no means of knowing, in 1921, that one of the authors of that vicious, Socialist book, which he held up to the attention of the Senate on three occasions, would, in 1925, be chosen by "great international organizations of women" to represent them on a League of Nations Committee. When the Senator discovers the choice of these international women of a world representative, however, he will hardly be "converted" to the League of Nations thereby.

Friends of the League of Nations must feel mortified, indeed, at the glaring inconsistency of the League in attempting to interfere in the education of youth, child labor legislation, etc., when it is most solemnly bound to respect "the territorial integrity and political independence" of nations and to *keep out of their domestic affairs!*

The "international women" are doing the league a distinct disservice in trying to use it as an engine of pressure on their *own* governments for social legislation which their *own* governments will not enact.—*Woman Patriot*.

VERDICT OF GUILTY

In Winnipeg a Christian Scientist practitioner was found guilty, by a jury, of manslaughter because he prevented the administration of antitoxin to a child suffering from diphtheria. Absent treatment by prayer did not save the child's life. The defense was that the prosecution had not proved that the practitioner had refused to permit antitoxin to be administered. The jury took only a short time to find a verdict of guilty.—*Medical Sentinel*.

THE CHASTISEMENT

Harsh punishment inflicted in anger relieves the parent's overcharged mind, but in most cases it serves no other useful purpose, and, in the last analysis, often does irremediable harm. Spanking and whipping are the easiest forms of punishment and the least intelligent. The parent, angered by something the child has or has not done, vents his own fury in this way. There is little logic in such punishment, and less justice. The chastisement is not measured to fit the scale of the offense; its severity depends largely on the physical strength of the parent and the degree to which he is incensed. The animal rage which it creates in the parent weakens his self-respect, and the majority of parents are heartily ashamed of themselves after such scenes with a child. It is not conducive to comfort to know that simply because one is larger and stronger one has permitted himself to inflict brute force on a child.—Brown, Alan: *The Normal Child*, New York, the Century Company, 1923.

Correspondence

IRISH DOCTORS UP IN ARMS AGAINST GOVERNMENT'S PROPOSAL

Chicago, Ill., September 25, 1925.

To the Editor:

The enclosed clipping from the *London Times* explains briefly the Trinity Medical College (Dublin) situation, at about the time I left Ireland. Most of the doctors think that the Free State Government are making a serious mistake.

The matter was not settled definitely when I left.

Trinity College is a wonderful institution in most every respect and ranks with all of the leading universities of Europe.

A. M. HARVEY, M. D.

The following from the *London Times*:

STATUS OF IRISH DOCTORS

THE COMING SENATORIAL ELECTIONS

(From Our Own Correspondent)

Dublin, Aug. 18.

The decision of the Free State Government to create a special Medical Register for the 26 Irish counties under its own control, continues to monopolize public attention. Throughout the country the whole of the medical profession, irrespective of political opinion, is up in arms against the Government's proposal and Dr. Hennessy, who is the Irish medical secretary to the British Medical Association, and also a member of the official Government Party in Dail Eireann, has made a public protest against it, declaring that its effect will be to place Irish doctors in the position of "quacks."

The matter receives added interest by reason of the elections for the Senate next month. Seventy-six candidates are going forward for 19 vacancies, and the medical profession will probably mobilize all its forces in order to secure the return of those persons who will not consent to the Government's latest move. The Senate can hold up the proposal for a certain length of time, but it has a far stronger weapon in the referendum. Under the Free State Constitution the Senate can refer an issue of this kind to the popular vote, and there is little doubt that public opinion in its present temper would support the medical profession.

The position of the Irish medical schools will be very serious if the British Medical Register is lost. During the last 20 years the number of foreign students, notably of South Africans from Stellenbosch and other African universities, has been increasing steadily, and now Dublin rivals Edinburgh as a cosmopolitan medical school. If Trinity College is deprived of the privileges of the Medical Register, these students

will undoubtedly transfer their allegiance to Belfast or some other university where they will be subject to no restrictions. The South African students say that if they cannot have their names on the British Medical Register there is no point in their coming to Europe to study. The national university also has a large number of foreign medical students, including Egyptians and African natives.

Almost without exception these students will be lost to Dublin if the Government's plan is carried into operation, and there is a danger that the mere threat of a separate Medical Register may prevent the matriculation of new arrivals at the beginning of the coming academic year.

YOU'VE ALWAYS GOT TO SMILE

By JAMES J. MONTAGUE

You got to keep on smilin'

However hard the way,

Altho you're shy the cash to buy

Your three square meals a day.

You may have ketched the measles

Or else, perhaps the mumps;

But just the same you must be game

An' never get the dumps.

A glum an' gloomy spirit

The brightest life kin spile

No matter what complaint you've got

You've always got to smile.

You got to keep on smilin'

An' never heave a sob

Or pull a moan or spill a groan

When you have lost your job.

If wife and kids have left you

Don't never shed a tear;

Be gay and glad as ef you had

A heart plumb full of cheer.

Remember, livin' single

Ain't sech an awful trial—

The clouds you'll find is silver lined

If only you can smile.

You got to keep on smilin'—

There's no sech word as fail—

Tho by mistake the laws you break

And get shet up in jail.

An' even ef they hang you,

The rope won't hurt you long,

So while you wait to meet your fate

Just sing a little song.

Keep readin' smilin' poems;

They make hard luck worth while,

Our recompense for lackin' sense

Is learnin' how to smile!

In *Philadelphia Evening Bulletin*.

A NEW ONE

Mule—What are you?

Ford—I'm an automobile.

Mule—Gwan! If you are an automobile I'm a horse.
—Times of Cuba.

Washington's cabinet had four members.

Original Articles

PRESIDENT'S ADDRESS*

L. C. TAYLOR, M. D.

SPRINGFIELD, ILL.

In choosing a subject for presentation at an anniversary meeting, such as is being held at this time, I feel it is safe to assume that medical topics are amply covered in your excellent program and that we may profitably give our attention to some of the present and future problems confronting the profession. Volumes sufficient to form an extensive library have been written on medical history and will continue to be written until the intricate problems of the present time have been solved. Groping in darkness, as to the origin of disease and with limited knowledge as to the physiological laws, it is not strange that imaginary curative agencies without number have found their way into the literature. The slender threads of truth contained in many grotesque methods of treating the sick have been recognized by the medical profession for over a thousand years, but the basic principle in a majority of these so-called "cures" remain the same. They are psychic in character and will continue to attract the attention of those who prefer the diversion of the occult and mysterious to the study of established scientific casts. Approaching the present period, when many new methods of treatment have sprung into existence, one thought is conspicuous in the discussion of this subject by physicians, and that is the lack of appreciation of our position by the public. Unfortunately, many people in all walks of life see nothing in our attitude, excepting personal interest.

In many of the contributions to medical journals and in discussions at meetings of national boards of examiners and teachers in our great medical institutions, there appears occasionally the suggestion that intolerance by the profession of new ideas has led to the impression that our attitude on many of these subjects is prompted by prejudice. Twenty-seven years of personal experience on my part fails to confirm that attitude—Whatever errors may have occurred in the earlier history of medicine is only in keeping with the intellectual development in the passing centuries. This reference is only to emphasize

the responsibility of the profession to the sacred memory of those whose contributions to science will be as enduring as history. Toward the close of the eighteenth century, people were dying in Europe at the rate of about four hundred thousand annually from smallpox. The discovery of vaccination reduced, in a short time, this appalling mortality to a negligible number, and yet, after the lapse of more than a century, we are frequently confronted with the humiliating necessity of defending the efficacy of this immunizing process before legislative committees and in the courts. Fortunately, municipalities, schools, industrial organizations, etc., have in a great measure lightened the burden, and the etiology of many diseases will no longer be a subject for serious discussion. Following the divergence of opinion above referred to is the developing discussion in reference to the length of time and the character of the course necessary to fit one to sit at the bedside of the sick. The time devoted to ultra technical work, which would be made use of to only a limited degree, if at all, in a general practice is forcing itself upon the attention of those responsible for medical teaching of the future.

Men with long experience as instructors in our great educational centers have for the past two or three years been decrying the disappearance of the family physician and yet bestowing upon them a high measure of praise as reliable general practitioners. That apprehension on this point is not confined to this country alone, is emphasized by Sir William Osler when, in one of his last utterances, he appealed to the profession to get "Back to the bedside." Seven years of experience in conducting practical examinations of between three and four thousand applicants for licensure has demonstrated to me that Professor Osler's admonition to get "Back to the bedside" can be made effective by giving less attention to the training of technicians and specialists and encouraging in them an interest in bedside observation before the mind is stored with material of less practical value.

Increased care in history taking and greater emphasis upon physical findings will no doubt maintain the present well earned reputation by those in a measure remote from hospital and laboratory centers.

Many of the simpler chemical and microscopical examinations can be successfully carried out

*Address at annual meeting of the Illinois State Medical Society, Quincy, May 20, 1925.

in any physician's office, thereby meeting the objection that the sending of all specimens to some diagnostic center for an opinion is likely to develop a lack of confidence of your patient as to your skill and thus increasing the problem of the country physician. Permit me to say at this time that the praises heaped upon the family physician by many of our writers is well deserved because emergencies arise which must be promptly met and naturally developed a spirit of self reliance—therefore, "Back to the bedside."

The development of interest, taken by the lay press and by periodicals, in disease and public health matters, has doubtless been a factor in breaking the shell of reticence which has encased the medical profession for so many centuries, until it is no longer considered unethical for a physician to address a mixed audience on a subject concerning life and health. Commensurate with a growing public interest in these matters, physicians are beginning to realize that upon them rests a part of the responsibility of a systematic education of the people. To make this effective, the cooperation of all agencies, with the same objects in view, will be necessary and a spirit of toleration for differences of opinion as to methods of procedure must be cultivated in order to obtain substantial results. The campaign now being carried on in Illinois by the official organ of the State Medical Society and the Council, while yet in its incipency, will lay the foundation for a great work if only the whole profession will supply the moral and material aid necessary for success. Many societies, known under different names, such as the Federation of Women's clubs, nurses' associations, child's welfare stations, tuberculosis dispensaries, associated charities, etc., have sprung up with overlapping responsibilities and differences of opinion as to policies which threatened to complicate, if not jeopardize, the objects of their creation. Many meetings have been held, attended by representatives of these various organizations and participated in by physicians and Miss Carroll Keller, the official lay representative of the Illinois State Medical Society, the object of which was to cultivate a spirit of harmony and mutual understanding, both in health problem and legislative matters.

In regard to the threatened scarcity of physicians in sparsely settled districts upon which much is being written, I have not seen as yet a

satisfactory solution of the subject, although a basis is being laid for serious consideration. When the arguments are sifted down, a marked difference of opinion will be manifest. My personal views have been formed by several years experience in a village practice a longer period in a city of larger proportions, and seven years of close contact with students fresh from college, seeking licensure and a location for practice. I assume the responsibility of any views I may offer on this question and at the same time, express my appreciation of the energy and valuable time in an attempt to solve these emergencies by others. Primarily, the method of instruction in our medical colleges can and no doubt will be changed by those who are in a measure responsible for the present condition of affairs. Second, the supply of physicians in the more densely populated centers of industry and in the larger cities does not seem to present any serious problem at this time and the situation can be met in an ethical manner. In districts, however, where the population is too small to support a physician, the question will be harder to solve. The payment of a salary, however, by subscription or taxation would develop a condition closely approaching state medicine, which I am confident we are not ready to accept.

That an earnest and successful effort will be made to change the present methods of medical education, by those entrusted with that responsibility seems more than probable, in view of the present general discussion of that subject. Whether that will meet the demand of sparsely settled districts or neighborhoods where the fees would be inadequate to support a physician, will depend in a considerable measure upon the proposition as to whether the recent graduate under those conditions would pursue any different course than at the present time. That physicians can now be spared from many of the more densely populated centers is conceded, and yet the solution has not been reached. With all due consideration for the opinions of others from whom I may differ, the question of medical education bears a resemblance to the great problems presented not only in other educational matters, but in all of the great avenues of industry which are taxing the ingenuity of students of economics throughout the world. I have touched upon this subject as one of our problems, in order to emphasize the fact that the relationship between the

technician, specialist and family physician is so intertwined as to present one complex question for solution.

I am not of those who entertain a pessimistic view of the future of scientific medicine. A profession that has made discoveries which are accepted by every civilized nation on earth will be able to sustain itself against the attacks of any heterogeneous mass of persons or organizations whose purposes seem to be the overthrow of generally accepted fundamental principles for which they offer nothing tangible in return. The medical profession stands ready at all times to accept scientific truths regardless of their origin, and will investigate, without prejudice, any method seriously offered to alleviate bodily ailments, but among the innumerable and grotesque methods resorted to in the last thousand years, no dogma has ever survived, and there seems to be no reason to assume that new ones springing into existence will escape the oblivion that has overtaken the rest. I am not considering methods of treatment at this time, and it is my desire simply to emphasize the attitude of our committees on medical legislation whose energies have been directed to the education of the public in the well established facts of the etiology of pathological processes, and that health laws and laws governing licensure to practice could have but one object, and that is the prevention of the spread of disease and the relief of human suffering.

PRACTICAL APPLICATION OF RADIATION THERAPY IN CONJUNCTION WITH SURGERY*

B. C. CUSHWAY, M.D.
CHICAGO

Radiation therapy is such a broad subject at the present date that it is necessary to limit its consideration to a few of the more common and typical lesions in the various parts of the body. Radium and x-ray are used in many of the lesions known to medical science. It was first used empirically, but later greater and more exact technique was employed in the detailed and systematic study of the biological reaction of normal and pathological human tissue to this form of energy, so that the treatment of certain lesions is now based upon rational and scientific grounds.

Let us briefly review some of the conclusions that have been drawn from this vast amount of experimental work. The action of roentgen rays and the rays given off by radium is destructive to animal tissue. Of late, very little is said in the literature of the so-called stimulating action. It is true that in certain cases increased growth can be demonstrated, but this hyperplastic growth soon results in increased resistance, in necrosis, or in early death. This temporary hyperplasia or hypertrophy is considered by Pordes as a retrogressive reaction due to protoplasmic injury rather than a progressive reaction. Practically all of the biological reactions of injury may be divided into three groups: First, that injury from which the cells may completely recover. Second, that injury in which the cells are permanently robbed of specialized functions including reproduction, but continue to live. Third, that injury that produces pycnosis, coagulations, necrosis, and death.

It is a conceded fact, then, that we have at our disposal an agent by means of which we may either temporarily retard function, permanently destroy function without causing necrosis, or completely destroy living tissue. The surgeon with the knife and cautery can only remove or destroy tissue. The most efficient treatment of many lesions has proven to be a combination of destruction and the retarding or destruction of the function of certain other cells or groups of cells. With this view in mind, let us take up the chief classes of disease in which x-ray or radium combined with surgery gives the greater percentage of cures, or shortens the convalescence of the patient. For convenience in description, let us divide the diseases that can be best treated with a combination of surgery and irradiation into the following classes: glandular dyscrasias, benign tumors, and malignancy.

Probably most important of the glandular dyscrasias treated by x-ray and surgery are exophthalmic goiter and toxic adenoma of the thyroid. These are distinctly different pathological diseases with very similar clinical symptoms, yet with definitely different results obtained with surgery and x-ray. Toxic adenoma usually makes its appearance early in life, gradually increasing in size, but not producing serious symptoms until the fourth decade of life or the menopause, while exophthalmic goiter usually makes its appearance about the age of 20 or 30, grows rapidly worse,

*Read before the Inter-State Post Graduate Assembly of America, Milwaukee, Wis., Oct. 27-31, 1924.

with periods of quiescence and acute exacerbations.

A great deal has been said pro and con about the surgical and x-ray treatment of these two conditions. I will give you the opinion of a few who have made the treatment of toxic goiter a study and have had wide experience. Dr. Edward P. Richardson, in an article based on cases studied by a committee of surgeons, internists, and roentgenologists at the Massachusetts General Hospital, finds the average results in all cases treated by sub-total thyroidectomy to be slightly better than the results in a selected group of cases treated by x-ray. The latter form of treatment, however, has certain advantages; the absence of mortality, operative scar, discomfort, distress, and hospitalization. He further states that in a certain percentage of cases it will bring about a degree of improvement with a lower operative mortality or making unnecessary some of the preliminary operative steps. In selected cases of exophthalmic goiter, roentgen ray treatment under careful control is justifiable for about four months. After that time, if condition does not promise a cure, operation should be resorted to.

Lars Edling reviews a series of cases treated at Lund, from 1915 to 1919. He finds the following results: 80% show positive improvement. Of these, 30% are apparently cured, 43% show considerable improvement, with 7% recurrences and subsequent improvement, and only 20% were failures.

Richard Sielmann reviews a series of 328 cases treated by radiation, as follows: 12% had been operated upon before irradiation. 5.5% remained free from symptoms from 7 to 10 years; 32% from 3 to 6 years, and 14% from 1 to 2 years, which makes a total of 50.9% free of symptoms. Of these, 44.5% were improved; 5% refractory. After irradiation, 13 (4%) were operated upon, 3 without results. This paper clearly points out why the roentgenologist and surgeon claim their respective procedures the proper method of treatment. Each has treated, with success, cases in which the other has failed.

In my opinion, this speaks for closer co-operation, in that the combination of the two methods will produce more than 70 to 80% of cures, which is a higher percentage of cures obtained

when surgery or x-ray alone are employed. Not only this, but in our experience, we have had a number of patients, who on account of extreme toxicity, were such poor risks that operation was considered impossible. After a series of x-ray treatment, the toxicity was so much reduced that operation was feasible. These patients have since been operated on and remained free from symptoms up to the present time. All my experience speaks at least for a trial, of this form of therapy. It does no harm, and makes the case a better surgical risk.

The next sub-group of diseases which come under this head and are considered both surgical and a type for radiation are the constitutional or idiopathic amenorrheas, menorrhagias and metrorrhagias. Those cases in which no pathological cause can be found other than a hypo or hyperfunction of the ovaries or endocrine system. Recent experiments have shown that the corpus luteum contains some substance acting upon the endometrium, thereby controlling the menstrual cycle. While the corpus luteum is the controlling factor, these idiopathic conditions do occur at the time when the endocrine activity is likely to be abnormal, and this often plays a most important role. Fortunately, x-rays control both conditions, through their action upon the ovaries. Flatau in the *Archives of Gynecology*, Berlin, December 30, 1922, reports 50 cases of idiopathic amenorrhea treated with x-ray, after all other forms of treatment had failed. Thirty-eight of these patients are normal at the present time. Of the 12 treated since 1921, 10 are normal, 2 have been delivered of normal children, and in the third case, the pregnancy has not yet reached term.

R. Balli and A. Fornero in *Actinotherapy*, Naples, June 30, 1922, report four cases of idiopathic amenorrhea treated with x-ray after all other forms of therapy, including long periods of organotherapy, all of which are normal at the present time.

In my own experience, I have treated two such cases with complete success in both cases. One returned for more treatment after a period of six months, now normal.

Although amenorrhea is classed as a medical disease, I have included it in this paper because of its close association to idiopathic menorrhagia and metrorrhagia which are classed

as surgical cases. These conditions are apparently of the same origin as amenorrhea and respond to the same form of treatment with a variation in technique which does not belong in this paper. However, this is still an academic question.

In the first year following the establishment of the menstrual function, menorrhagia is occasionally encountered. Leaving out all cases due to definite lesions such as fibroids, sarcomas, mucous polyps, metritis, utero adnexal lesions and systemic tuberculosis, there are many cases without any apparent cause and which have generally been attributed to disorders of the internal secretions. This condition often occurs in the child-bearing period and is most difficult to cure without hysterectomy, a form of treatment which is not desired. That which is indorsed by F. Dounay, Sir G. Blacker, E. L. Stewart, and H. M. Tovell, is a combination of medical, surgical, x-ray, and radium therapy. Since this is apparently a disorder of the endocrine system, organotherapy should be tried in an effort to restore the normal balance and relationship between the endocrine organs. A curettement may be performed as a diagnostic aid to eliminate malignancy in every case before beginning x-ray or radium treatments. This can be carried out in such a manner as to restore a fairly normal menstrual cycle, but may produce sterilization in a small percentage of the cases. However, inasmuch as hysterectomy is the only alternative, this is hardly to be considered as a contra-indication.

Gustave C. J. Scholten and Friedrich Voltz report 20 cases in which the spleen alone was radiated in purely functional menorrhagia with restoration of the normal function in 19 cases, a percentage of 95. They prefer this form of treatment in that they avoid the dangers of even temporary sterilization which in some cases is seriously objected to by the patient. Other statistics follow this percentage of cures very closely, ranging from 92 to 98% success.

Closely related to the above, yet belonging to the class of benign tumors, is the menorrhagia produced by the presence of fibroid or mucous polyps. W. C. Danforth analyzed 100 cases of uterine bleeding of non-malignant origin, of which 98% were successfully treated by irradiation. In selecting patients for irradiation, the

maternal possibilities of the patient must always be kept in the foreground. This treatment is particularly applicable to women at or about the time of the climacterium. Under 40, its use is not to be lightly regarded, for the complete inhibition of ovarian function which the usual dose for myopathic bleeding brings with it, may have more serious consequences than the condition which we are attempting to eliminate. In the presence of pelvic infection, past or present, radium should not be used. A number of deaths have been reported as the result of pelvic peritonitis as a sequelae of lighting up of an old pelvic infection by the application of radium. The larger fibroids should be removed surgically, although even here, x-ray or radium may be of inestimable value where the condition has resulted in a secondary anemia to such a degree that the patient is a poor surgical risk. The hemorrhage may be so reduced that the patient is in much better condition for operative proceedings. This can be done without altering the operative fields or delaying union in any way. Irradiation is also of inestimable value in those cases in which surgical procedures are contraindicated due to a constitutional disease or where refused by the patient. Under the age of 40, great benefit may be obtained by this form of treatment, without producing amenorrhea if carefully and properly given. In my experience, I have had about 95% successful results without producing a permanent amenorrhea in any case, although an amenorrhea of from 3 to 9 months has resulted in a number of cases. Normal menstrual function was established in all cases after this period.

Included in the classification of benign tumors, treated best by a combination of surgery and irradiation, are nasal polypus. Horace R. Lyons of the Mayo Clinic, in reviewing 55 cases says, "All possible methods of medical and surgical treatment have been attempted and as yet, a definite procedure that will affect a permanent cure has not been found. The use of radium was introduced about three years ago in an effort to aid operative measures in affecting a cure or at least delaying return." He reached the following conclusions:

1. The application should be started on the second or third day after operation.

2. Radium should be applied not oftener than once a week.

3. 200 mg. hours of radiation at weekly intervals has not produced a burn, and is, therefore, safe radiation.

4. Radium in a majority of cases, undoubtedly lengthens the interval of recurrence.

5. Definite operative cures occur more often with radium than without it.

6. Radium does not affect an associated suppurative sinus disease.

With respect to the treatment of malignancies, I hesitate at the present time to advise the use of radiation to the exclusion of all other forms of therapy as some have done. The application of this form of energy to malignant tissue has not proved to be the success that has been claimed for it, except, perhaps, in one type, the basal celled epithelioma where large series treated by radiation alone gives 91 to 99% cures. In other types, the percentage is about the same or even slightly lower than when surgery is used alone. I am not considering here, of course, the vast number of inoperable malignancies that are sent to the roentgenologist, who obtain a marked relief of symptoms and in a large percentage, a prolongation of life, nor those who are so much improved that operation is possible.

A great deal of interesting and valuable experimentation has been carried out in the last two years in the effects produced by radiation upon normal and malignant tissue. Wood and his co-workers find that in mouse tumors radiated 15 minutes, they obtain 100% of takes; with 40 minutes exposure, the percentage of takes was reduced to 50. With 65 minutes of exposure or over, the takes were reduced to from 2 to 4%. Applying this to the treatment of malignancy in man, we would expect that the metastasis following surgical intervention would be greatly reduced by irradiation providing distant metastasis has not already occurred. We would also expect pre-operative irradiation to reduce the likelihood of metastasis, especially in the operative field, or contiguous tissue. It is also indicated in cases where they cannot remove a wide margin of normal tissue adjacent to the new growth or where excessive manipulation cannot be avoided. This is a field in which a combination of surgical and radiation therapy obtains the greatest number of good results. In

actual practice, this is borne out by clinical observations, although statistics at the present time are not complete enough in all forms of malignancy. Dr. J. De Smit sums up the results in 117 cases of operative carcinoma of the breast; 60 of which were treated by x-ray following operation with the following results: glandular relapse occurred in 27% of treated and 29% of untreated cases. Relapse occurred without glandular involvement in 10% of treated and 20% of the untreated cases. Although this series is not very large, it is certainly a very strong argument for the combination of surgery and roentgenotherapy in the treatment of malignancy.

Arthur Desjardins of the Mayo Clinic advises pre-operative radiation therapy in all cases of carcinoma of the breast, "Because the radiation can be employed much more effectively before operation since there would not be a recent wound to prevent the arm from being well abducted. The entire axilla can be more thoroughly treated and there is less tendency for malignant cell dissemination at the time of operation. This principle may be applied to the general surgical treatment of all malignant conditions, except in cases in which surgery is intended as a preliminary step before radiation.

In connection with this last exception, carcinoma of the rectum and bladder are the more common in which preliminary surgical steps are taken to facilitate or make possible the application of radiation. In carcinoma of the rectum, the surgical statistics show a "Clinical cure" at the three-year period of from 15 to 20% following the radical operation with an operative mortality of about 16%. This includes statistics covering several thousand cases. Ernest A. May of the Metcalf Foundation Institute for Deep Ray therapy, reviewing 51 cases in which the combined treatment was used, says, "We treated every case, not one being refused as hopeless. 29 or 57% of them were operable; the other 22 or 45% were inoperable. Of these 22 inoperable cases, 5 cases, or 23% have become operable by means of radiation. Of the 51 cases, 2 died as the result of operation, and 32 died of cancer within an average of 2½ years. 15 cases or 29.5% show a permanent cure after 2½ years. Two others show improvement.

Carcinoma of the bladder is another condition

which requires a combined procedure. Suprapubic cystotomy with the implantation of radium directly into the tumor has greatly reduced the mortality of this disease. B. S. Barringer, New York, reports 19 still living out of 35 cases, of these 20 were classed as inoperable.

One of the most common locations of carcinoma and one which has received a great deal of attention by the physician and neglect by the patient is the uterus, generally the cervix. The combined statistics for the radical operation indicate 20% survivals in from 3 to 5 years. Statistics of the results obtained by x-ray and radium alone give the following results: L. Seitz, 58 patients, with 20.9% survivals, Döderlein, 205 cases—19.5% survivals, Bumm, 78 cases—14% survivals, Baisch, 42 cases—16% survivals, Klein, 73 cases—12% survivals, and Haymann, 26 cases—26.9% survivals. The average here is seen to very closely approximate that obtained by the radical Wertheim operation. The statistics do not take into consideration the number of inoperable cases refused by the surgeon who have been treated by radiation and have been so improved as to become operable or the large number of inoperable cases who have been made more comfortable, the pain and discharge eliminated, the patient becoming practically free of symptoms during the rest of a prolonged life, though they finally succumb to the disease.

Statistics of the combined treatment by surgery and radiation therapy are not extensive enough at the present time to give definite percentage of results. The most of the cases treated in this way are too recent to obtain definite figures on the effectiveness of this method, although the results of the method in other types of carcinoma would lead us to believe that the per cent of survivals would be much higher. Since it has been found that many times the primary lesion is less susceptible to radiation than the metastases, this method has gained in favor and is being used in many of the larger clinics of this country. Harry H. Bowing, of the Mayo Clinic, draws the following conclusion from his experience in the section on Radium and Roentgen Ray Therapy:

1. If the lesion is adequately treated with radium, and a sufficient interval between the first application and total abdominal hysterectomy follows, active carcinoma cells will not be found on microscopic study of the specimen removed.

2. As a preoperative procedure, radium treatment is by all means the most effective. It destroys the neoplasm and calls forth the natural defense mechanism of the body. If cases of primary carcinoma of the cervix are subjected to such treatment, special difficulty will not be added to the operation.

3. A total abdominal hysterectomy following the radium treatment is a justifiable procedure, since it deals most effectively with the pathological condition and also deals with other pelvic lesions that may be found at the time of operation.

While carcinoma of the esophagus is hardly classed as a surgical condition, yet, inasmuch as gastrostomy is very often necessary, I am including a brief summary of 44 cases treated by R. Walter Mills and John B. Kimbrough, of St. Louis. In no case have they a cure or one that will probably result in cure. In the series, the palliative result was strikingly good in 12; fairly good in 12; fair in 14, in 3 slight, and in 3 others, negative, the longest duration of life after treatment was 3½ years. Another lived 2 years and 4 months, another one year and seven months. The remainder died within one year.

In my own experience, I have treated 11 cases in the past 2½ years. These have been treated by means of radium within the esophagus and x-ray 200 K. V. over the thorax. The results are as follows: Three are living, one after 2½ years, one after one year, and one after six months. All the dead died within one year, but the palliative effect was striking in practically every case. I believe the good results here were due to the combination of deep x-ray therapy with the direct radiation with radium. The combination of the two methods has a great advantage over either alone. Radium is best used to treat the local lesion, while x-rays are most advantageous in treating the lymphatic and outlying tissues, which are too far away from the radium to receive sufficient radiation.

The results given here and in other portions of this paper certainly argue for a closer co-operation between the surgeon and radiologist.
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EPIDERMOPHYTOSIS*

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Gentlemen: My first duty as well as pleasure is to thank you and the officers of this great association for the privilege of addressing you this afternoon. I assure you I appreciate deeply the honor conferred upon me.

I have chosen as the theme of my discourse the form of ringworm known sometimes as epidermophytosis. My object in this choice is principally to try to make known to the medical profession as a whole what dermatologists have learned during the last five years about an infectious disease which has grown in this interval from relative nothingness into one of our most prevalent affections.

Before entering upon the description of this infection let us pause a moment to review what our predecessors have known concerning it.

In 1869, Hebra, to whom we all owe so much, described eczema marginatum. Soon after Hebra's first clinical description, Körbner, Pick and Kaposi demonstrated the "mycotic" nature of the disease. In 1870, Tilbury Fox proved that certain so-called eczemas of the palms were in truth of ringworm origin, and in 1888 Pellizari described the same disease on the lateral aspects of the fingers. In 1891, Arnozan and Dubreuilh and also Mansouroff demonstrated examples of these conditions before their local medical societies. In 1892, Djelaleddin Mouktar wrote the most detailed and comprehensive paper on the subject which had thus far appeared, but limited himself to the disease on the palms and soles and fingers and toes. It was he who first noted that

dyshidrosis and ringworm were indistinguishable clinically.

In 1905, Castellani proved that "dhobie itch" was in reality due to an unusual variety of ringworm fungus and gave the name of *Trichophyton cruris* to an organism which he isolated from some of his cases; at this time he recorded cases of this disease on the scrotum, in the axilla, and on the chest and abdomen, and even went so far as to say that the disease could exist anywhere except on the scalp. Two years later, that is, in 1907, Sabouraud showed that this fungus was not a *trichophyton* but belonged to another genus and he gave it the name *Epidermophyton inguinale*.

In 1902, Whitfield published his first observations. Later, in 1910, he discussed maceration between the toes, and three years later was sufficiently informed to classify the disease into three types: 1, the acute vesicobullous; 2, the chronic intertriginous of the toes, and 3, the hyperkeratotic of the palms and soles. In 1910 he gave us "Whitfield's ointment."

In 1910, Bang added further confirmation from Copenhagen of the rapidly increasing appreciation of epidermophyton infections. In 1913, Nicolau revived the study of the so-called eczema marginatum of Hebra, decidedly increasing our knowledge of the disease. In 1914, Kaufmann-Wolff published a paper based on twenty-five cases observed in Vienna, Paris and Berlin, and described for the first time the lardaceous type of infection between the toes. In the same year, 1914, we find the communication on this subject from an American source, Montgomery and Culver; followed, in 1915, by one from Hartzell. In 1916, Ormsby and Mitchell published their striking paper corroborating the earlier claims of Mouktar that dyshidrosis is purely and simply an epidermophyton infection. In the same year another American, Dr. C. Guy Lane, published a paper. Perhaps the last lengthy communication on this subject, a paper based on the observations of 165 private cases, was read by one of us (C. J. W.) in 1919.

Considerable work has been done in the last three years on the generalized eruptions accompanying deep fungus infections. The chief is that of Bloch (*Les trichophytides*, *Ann. de dermat. et syph.* 2:1 (Jan., 1921).

E. Bruusgaard (*Brit. J. Dermatol.* 34:130

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(May, 1922) reports a case of blood borne infection with a trichophyton of the gypseum group, and Williams also reports cases of trichophytides accompanying kerion. (Arch. Dermat. & Syph. 4:353 (Sept., 1921).

No cases are found in the literature of a similar eruption with epidermophyton infections and since all the trichophytic eruptions accompany deep infections it may be that they will not be found in such a comparatively superficial condition as that of epidermophytosis. On the other hand, the frequent failures to find the fungus in the generalized epidermophytoses would be well explained by the postulate of an epidermophytide. It is also certain that the epidermophyton is not responsible for all the infections now classed under the head of epidermophytosis. Cultural experiments by Mitchell (Further Studies on Ringworm on the Hands and Feet, Arch. Dermat. & Syph. 5:174 (Feb., 1922) and Greenwood (Report on Cultures of Parasitic Fungi, Arch. Dermat. & Syph. 8:81 (July, 1923) show a comparatively large proportion of the cases of epidermophytosis to be due to the trichophytions.

The most recent report on immunity in ringworm infections (Greenbaum: Immunity in Ringworm Infections, Arch. Dermat. & Syph. 10:279 (Sept., 1924) concludes that superficial ringworm infections give only a local tissue immunity; that deep infections (in guinea-pigs) result in a partial general immunity; and that few or no ringworm antibodies develop in the course of superficial ringworm.

R. de Silva (J. Trop. Med. 24:303 (Dec. 21, 1923) produced typical Dhobie itch on a man by inoculation with a culture of epidermophyton rubrum (Castellani). According to Ota (Contribution to Study of Trichophyton Purpureum Bang, Trichophyton Interdigitale Priestly and Trichophyton "B" Hodges, also on Trichophyton "A" and Trichophyton "B" of the author, Arch. Dermat. & Syph. 5:693 (June, 1922) this organism belongs among the group of trichophytions.

J. Butler (Northwest Med. 21:366 (Oct., 1922) reported a case of epidermophytosis on the bald scalp—a very unusual location.

N. Hallows (Lancet 2:291 (Oct., 1922) presented an excellent article on the control of tinea cruris.

Interesting original work has been done by J. G. Hopkins, M. D., and K. Iwamoto, M. D., on Fermentation Reactions of the Ringworm Fungi

(Arch. Dermat. & Syph. 8:619 (Nov., 1923); ibid, 8:838 (Dec., 1923).

W. Dubreuilh (Ann. de dermat. et syph., page 65 (Feb., 1924) has described an intertrigo from which was constantly recovered a parasite of yeastlike growth not resembling the trichophytions.

Sabouraud criticizes (Ann. de dermat. et syph. 4:425 (July, 1923) Petges' Report on Epidermomycoses (Premier Congrès des Dermatologistes et Syphiligraphes de langue française, Masson et Cie, Paris, 1922). He states that there are only trichophytic and streptococcic intertrigos, and that great care should be taken to be certain that the common and known infecting agents are absent and that the supposed causal agents (chiefly yeasts) are not merely surface contaminations.

M. Zingali (Gior. ital d. mal. ven. 64:929 (Aug., 1923) distinguishes two types of epidermomycosis of the hands and feet: 1. Dyshidrotic or eczematous, vesicular and pustular; 2, intertriginous, usually seen between the fingers and toes.

Petges gives a comprehensive Report on Epidermomycoses (Premier Congrès des Dermatologistes et Syphiligraphes de langue française, Masson et Cie, Paris, 1922).

Dyshidrosis has had much discussion during the past few years. Darier (Lancet, Sept. 27, 1919) demonstrated that 80 per cent. of the cases giving the clinical picture of dyshidrosis were of mycotic origin, and this led him to deny the autonomy of dyshidrosis. He considered it most often mycotic—at times artificial. The parasite was most commonly the epidermophyton, but might be a trichophyton or one of the group of yeasts—saccharomyces cryptococcus (Greenbaum and Klauder).

Sabouraud and Brocq hold that a true dyshidrosis, not mycotic, exists (Sabouraud: Bull. Soc. franc. de dermat. et syph. No. 3, 1922).

A. Sicoli (True and Pseudo Dyshidrosis, Ann. de dermat. et syph. (Feb., 1924) after very thorough work in Sabouraud's laboratory concludes that the disease dyshidrosis is not a true entity but a syndrome which may be caused by 1, a mycotic infection; 2, by irritants; and that there is a third condition which is probably the dyshidrosis of Tilbury Fox. He distinguishes distinctive histological changes in these varieties.

E. Rajka (Arch. f. Dermat. u. Syph. 143:204,

1923) concludes that the syndrome called dyshidrosis comes from three causes: 1. Mycotic (trichophyton gypseum and epidermophyton); 2. pyogenic microbes; 3. other causes not parasitic.

Other articles on the general subject which have appeared are:

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Greenbaum, S. S., and Klauder, J. V.: Yeast Infections of the Skin: Report of Cases and of Studies on the Cutaneous Yeasts, Arch. Dermat. & Syph. 5:332 (March, 1922).

Epidermophytosis is a multiform infection of the skin and nails due, evidently, to various types of the ringworm plant. Seemingly in the long run it spares no portion of the human body save the hair.

Etiology. The exact provenance of this mould is very hard to determine. In the majority of instances we obtain absolutely no clue as to the source of infection and feel inclined to fall back upon the idea that the spores are derived straight from the air. This is not a shiftless thought for we know that leather shoes left in a suitable place and atmosphere may develop a mouldy growth upon their surface.

Watching this disease intensely during the last six or seven years and questioning its victims closely we feel decidedly inclined to incriminate the animal products leather and wool as the chief sources of infection. Among the separate items which have created suspicion I would mention bathing suits, jockey straps, handles of golf clubs, knitting wool, leather and woolen gloves, woolen socks, woolen tights, leather shoes worn without stockings, trusses, base balls and athletic underclothes which have been hung up, hot and

wet after use, in a dark, confined space and subsequently worn once or many times without being cleansed. In addition to these two groups a wet sponge used in bowling seemed to be the infectious origin in one patient.

Two probable etiological conclusions stand out pre-eminently: first, man does not give this disease to his neighbor directly; and second, the bulk of mankind, in New England at least, seems relatively immune to its attack, for in my private practice in only 4.5 per cent. of these infections was a second example found in the patient's family or immediate entourage. The only exception to this second conclusion occurred in a boarding school of 175 boys, where six individuals, who used the same shower-bath became infected about the feet. As a second known instance there is on record the infection of twenty-three members of a golf club whose feet became involved after using the club's shower-bath.

Mycology. The laboratory investigation of epidermomycoses consists of two parts: (a) the microscopic examination of the fresh material, scales and bits of the infected nails, and (b) cultivation and identification of the fungi.

It is important to select the most favorable material for microscopic examination. In the foot and hand cases the best material will be found at the advancing borders of the lesions. At the junction of the infected area with the normal skin there will be found a delicate scaling border with the free ends of the desquamating epidermis toward the centre of the lesion. This edge should be raised with forceps and peeled off toward the normal skin and examined. The macerated material so often seen is useless in most cases.

In the vesicular type one should cut off the roofs of the vesicles and use them for examination. The roofs of dried vesicles are also frequently positive. The ordinary crusts in these cases are of no value.

In nail cases one should pare off thin slices from the nail after its surface has been scraped clean with the edge of a glass slide. If it is necessary to preserve the material for future examination it is best kept between two slides whose surfaces have been flamed. Such material may be kept almost indefinitely, both for examination and for cultural work.

For the microscopic examination of the fresh

material use is made of the clearing effect of KOH on the tissue cells, while the fungi are resistant, the result being that the fungi show as refractile bodies against a fairly clear background.

The usual directions are to mount the material in 40 per cent. KOH on a slide, cover with a cover glass and gently heat, but we have found that much better results can be obtained by boiling the material in a test tube or watch glass in an excess of KOH. The boiling should be carried just to the point where the scales do not disintegrate. The liquid with the scales is then poured into a watch glass and the scales floated onto a cover glass as one would mount a paraffine section. In case the scales are disintegrated the liquid may be centrifuged and the sediment pipetted off and mounted. The fungi are so resistant that long threads or hyphae may be found in a case which contains a considerable amount of the fungus.

In searching for the fungus the high dry lens of the microscope should be used with most of the light cut off. Frequently the hyphae can be seen with low power and if one is sufficiently expert in their recognition this is a great saving of time. The parasite should appear as a septate, refractile thread, sometimes branching and sometimes broken up into a chain of fragments. One should never make a positive diagnosis unless these fragments are seen in definite chains. These fragments are usually spoken of as spores, but they are not true spores but are bits of the vegetative part of the parasite. Much patience is necessary in this part of the work and several hours of careful search are not too many before pronouncing a case positive or negative.

The fungi show two stages of growth—the simple vegetative, and the form in which certain portions of the hyphae are differentiated for the purpose of reproduction. The primary reproductive body of the fungi is called a spore, and in the fungi it performs a function analogous to that of seeds in the higher plants. The vegetative forms are practically all alike, certainly not sufficiently different to allow identification of the different genera and species in the scales, so that their manner of producing spores or fruiting bodies is the chief means at present known for such identification. In the host these fungi show only their vegetative form; on cultures they may show distinguishing features such as special spore

production or other differentiating manners of growth, and it is for this reason that they must be grown in culture.

There is one other peculiarity which must be considered. On mediums containing sugars many of these fungi, after varying lengths of time, take on the so-called pleomorphic form, which is a return to the vegetative manner of growth. This consists of an overgrowth of hyphae which do not produce spores and which, when transplanted, always give the same pleomorphic growth, never the characteristics of the primary culture. On mediums which do not contain sugar this change does not occur, so that we grow all our cultures on two mediums, one containing sugar and one containing only agar and peptone to preserve the culture. The standard mediums are those of Sabouraud and are made up as follows:

(a) Glucose	4%	(b) Maltose	4%
Peptone	1%	Peptone	1%
Agar	1.5%	Agar	1.5%
and (c) the conservation medium,			
Peptone	3%		
Agar	1.5%		

A crude French glucose and maltose can be obtained or American pure dextrose (DifCo) may be used. Peptone Chassaing, a French product, is the best peptone to use. Recently a new medium has been recommended by William Goldschmidt (Brit. J. Dermat. & Syph. 36:204 (May, 1924). This consists of:

Pure glucose	4.
Agar	2.
Fairchild's pure bacteriological peptone.....	1.
Lemco (ordinary)	0.5
Sodium chloride	0.5
Tap water	to 100.
Standardized to pH 6.0	

This medium aims to do away with the uncertainties of composition of the ingredients of the French medium and the author reports it to be very successful in cultures of *Microsporon Audouini* which are grown with difficulty on the usual mediums. We have not yet given this a trial.

In sterilizing the medium care should be taken not to overheat as this changes the sugars. For the first plants of suspected material slants in tubes are used. For further study of the growths obtained plants are made on Erlenmeyer flasks which give more material and space for the fungi to show their manner of growth.

In making the first plants the dried scales are cut up into small pieces and placed on the agar, about four pieces to a tube. At least twenty plants should be made in each case, but often

many more are necessary before getting a growth. The great difficulty is from contaminations from bacteria and saprophytic moulds. Various methods are used to inhibit these, such as washing the scales in alcohol and adding gentian violet (1:500,000) to the medium.

The cultures are grown at room temperature and after a growth is obtained it is transferred to the three different mediums for study. It is also grown in hanging drop preparations of glucose bouillon and direct mounts made in glycerine. The authoritative work on this subject is by Sabouraud (Les Teignes, Paris, 1910) but considerable work is being done and our knowledge is changing rapidly.

STATISTICS

(Based since 1910 upon the experience of one of us (C. J. W.) in private practice)

SEX

Males	521
Females	315

AGE OF INCIDENCE

18 months	1 case
1st decade	9 cases
2d decade	96 cases
3d decade	216 cases
4th decade	187 cases
5th decade	130 cases
6th decade	108 cases
7th decade	34 cases
8th decade	5 cases
9th decade	1 case

OCCUPATIONS

Housework or none	172 individuals
Students	137 individuals
Clerical work	135 individuals
Physicians or nurses	62 individuals
Salesmen or women	32 individuals
Teachers	24 individuals
Handlers of leather	21 individuals
Lawyers	17 individuals
Household servants	16 individuals
Handlers of wool	15 individuals
Clergymen	13 individuals
Bank tellers	3 individuals
39 other occupations	1 or more

DURATION OF DISEASE

2 days	5 cases	1 year	75 cases	12 years	7 cases
1 week	12 cases	2 years	56 cases	13 years	1 case
2 weeks	41 cases	3 years	42 cases	14 years	1 case
3 weeks	15 cases	4 years	26 cases	15 years	6 cases
1 month	40 cases	5 years	17 cases	16 years	2 cases
2 months	41 cases	6 years	12 cases	17 years	1 case
3 months	33 cases	7 years	17 cases	18 years	1 case
4 months	22 cases	8 years	12 cases	20 years	1 case
5 months	25 cases	9 years	8 cases	25 years	1 case
6 months	26 cases	10 years	11 cases	30 years	1 case
7 months	5 cases	11 years	7 cases		
8 months	6 cases				
9 months	6 cases				
10 months	3 cases				

POSITION OF LESIONS

Palms	182	Both groins	223
Back of hands	57	Perineum	48
Fingers	225	Intergluteal folds	47
Arms	8	Penis	17
Bend of elbows	25	Scrotum	48
Flexor of forearms	20	Labia	16
Nails	21	Pubes	23
Scalp	1	Legs	11
Neck	10	Popliteal spaces	9
Axillae	96	Ankles	14
Under breasts	9	Soles	118
Umbilicus	7	Back of feet	42
Trunk	6	Instep	46
Left groin	39	Ball of feet	33
Right groin	15	Toes	272

TYPES OF LESIONS

Vesicular	307	Papular	44
Scaling	282	Callous	42
Macular	270	Keratotic	33
Macerated	128	Lichenified	21
Fissured	77	Purpuric	1
Epidermophytide			31

APPARENT INCREASE IN PREVALENCE OF THE DISEASE

1910	3 cases	1918	31 cases
1911	5 cases	1919	79 cases
1912	11 cases	1920	87 cases
1913	14 cases	1921	131 cases
1914	20 cases	1922	118 cases
1915	17 cases	1923	148 cases
1916	21 cases	1924 (up to Oct. 10)	126 cases
1917	25 cases		

MORPHOLOGY

As noted in one of the preceding statistical groups we have encountered the eleven following clinical types of the disease, namely, vesicular, scaling, macular, macerated, fissured, papular, callous, keratotic, lichenified, purpuric and epidermophytide. We may find pure types representing any of these several forms but more often a single patient will present one or more varieties of this multiform disease.

The Vesicular Form (24.8%). This type is the commonest and is found practically limited to the hands and feet. The vesicles may be minute and superficial or larger and deeper. The vesicles may arise in a few hours and in unaccountable numbers or they may develop from day to day and always remain scattered and sparse. The vesicles are always round and dome-shaped. When superficial one cannot differentiate them from the vesicles of dermatitis venenata and one must rely in the differential diagnosis upon the history of the case and upon the evolution of the lesions. When deep the vesicles often present a feature which one might well regard as pathognomonic. This characteristic consists of a peculiar steel-blue centre surrounded by a lighter-tinted periphery. Formerly we observed this feature in the vesicles of dyshidrosis but today most of us consider dyshidrosis as the vesicular form of epidermophytosis. The superficial vesicles are somewhat easily broken; the deeper variety is very tough and one must plunge the knife firmly to open them.

Both varieties of lesions may disappear spontaneously. If friction or maceration break the envelope of the superficial type the surface of the affected skin becomes wet and easily confused with the appearances of eczema madidans. During the possible spontaneous absorption of the contents of the deeper variety a noteworthy ring of desquamation may form about the periphery of the lesion. This phenomenon should always awake our suspicions that we are probably confronted with the disease epidermophytosis.

Vesicles of epidermophytosis usually form on the sides of the fingers and the toes, less often on

the lower surfaces and least often on the dorsal aspects. They are very often seen on the palms, when they are always deep, while on the plantar surface they usually affect the arch of the foot, less frequently the actual sole.

Itching may be slight and negligible, more often severe, and at times unbearable.

There are great variations in the course of this type of the disease; usually periodicity marks its progress. All forms of epidermophytosis are apt to be more severe in warm weather—plants as a rule flourish with heat and moisture, but the vesicular type above all waxes in the summer months. The vesicular type is perhaps one of the least obstinate and most easily curable of all forms of the infection.

The Scaling Form (22.8%). Perhaps we can regard the scaling variety of epidermophytosis as a stepping stone to the hyperkeratotic and to the callous varieties, but it has certain points which justify in my opinion a separate consideration.

The real seat of this type of the disease lies on or about the toes. This statement, of course, does not preclude the fact that a certain degree of scaling may at times accompany every form and every site of the infection. To observe the scaling process at its best, however, we must separate the toes one from another, and especially the fourth and fifth, and note the condition therein. In addition, we must turn the feet over and observe carefully the junction of the toe with the plantar surface.

This desquamative process seems to follow no precedent change—so far as one can see it is a primary one. The scales may be small or larger, they are usually adherent at one part, they vary from the dry, whitish type to the moister, greasy, darker-hued variety. When torn away they do not leave a bleeding surface. The scales where the toes join the sole are always small and usually whitish and relatively adherent. At times the scales are on the sides of the toes, at others in the web between, and again at both sites.

The degree of severity of this form of the disease varies greatly. At times it takes a careful observer to note that the condition exists, and this is especially true at the plantar seat. Very often the condition exists merely between the fourth and fifth toes. Again the merest tyro can see that every toe and every web is covered with many large scales. Pruritus is not particularly a salient feature.

The course of this scaling variety is always chronic but it cannot be regarded as one of the most obstinate forms of the malady.

The Macular Form (21.8%). This is the original type of the disease, discovered by Hebra as far back as 1869, labelled by him *eczema marginatum*, and within a few months proved to be mycotic by Körbner, Pick and Kaposi. Since then men have added the synonyms red flap, jockey strap itch, etc.

To study this form at its best one should examine the thighs at their uppermost contiguous portions. From a previous statistical survey this type was found to be four times as prevalent in men as in women. It is found in the great majority of instances on both thighs, but when unilateral it favors the left side in the proportion of more than $2\frac{1}{2}$ to 1.

We seldom see the disease in its infancy. When we are thus fortunate we find that it begins as one or more minute macules of a delicate pink-red color and covered at times in the colder months with a delicate, hardly appreciable, furfuraceous scaling. If present these scales give a suggestion of delicate buffness to the lesion. The plant is hungry and the process spreads. The single lesion grows and the several infections join so that in the course of a few weeks the outermost limits of the scrotum have been reached. The area of infection is not often visible unless the legs are separated. It is evident that this plant likes warmth, moisture and relative darkness. The infected area at this stage is solid, its borders are sharply defined. If it arose from a single focus the periphery is a continuous gentle curve; if from two or more points the outline is mildly serpiginous. The process in these mild restricted forms is not often itchy and is the most easily curable of all varieties of epidermophytosis. This form, unlike our old-fashioned *tinea circinata*, seldom clears up in the centre.

There is another side to this picture. Where the soil is favorable or the plant vicious we see an extension of the disease. The thigh, even as far as the knee, may become the seat of the infection, the pubes may be invaded, the penis or labia may be attacked, the scrotum may become involved and the perineum and the intergluteal fold to its uppermost part may be infected. Curiously enough the actual groin seems always to escape!

Each of these separate sites, save the middle

and lower thighs, for anatomical reasons presents variations in morphology and requires a separate description.

The pubic region is noteworthy only in the fact that the growth extends around the hairs but never invades them. How different from other forms of ringworm! The areas on the penis may be more elevated and assume a darker redness. Where the penis lies on the scrotum there may be maceration and rawness, perhaps due to a secondary infection. In circumcised individuals the glans penis and sulcus coronarius may present strikingly sharply bounded, mahogany-red areas. The labia majora, and at times the minora, grow darker in color and become thickened. The greater lips become dry and may develop a relative elephantiasis. The itching is practically always severe and often insupportable. The plant on the scrotum may produce a superficial redness and moisture and rawness; or a dryness and marked thickening of the skin; or again peculiar, pea-sized, red, raw-looking, dome-shaped, isolated papules. The disease on the perineum presents no marked characteristics save those of mildness. The diagnosis, if the perineum alone were infected, would be an extremely difficult one. The peri-anal and intergluteal region, on the other hand, produce symptoms in no way comparable with those of this group as a whole. Scaling is obviously absent: the redness is of a deeper hue and more angry; the anus itself seems fortunately to escape. The process, as a rule, soon leads to maceration, but we shall consider this feature under a separate heading. Itching here is usually present and of the severe type and we must differentiate this process from pruritus ani of other origins.

The macular form of epidermophytosis can and does exist on many parts of the body besides the genital and peri-anal regions, in fact we can encounter it over the whole body surface from the top of the scalp to the dorsum of the feet.

The disease on the scalp is of the utmost rarity, in fact so far only three cases have been recorded in the literature, one by one of us. Quoting from a former personal description "the follicles for the most part appeared as patulous mouths, like the openings of a fine pepper box. Between many of these orifices and covering and obliterating others was a curious, brick-red, rather glistening and seemingly fibrous, curiously tortuous, elevated tissue with no suggestion of scales. Here

and there, apart from this extraordinary development, was noted a papery exfoliation somewhat like that of a partially extinguished favus."

The macular form in the axillae is quite similar to that seen on the thighs and pubes. It is usually confined within the axillary folds but may extend well onto the chest wall in front or below.

The macular form below the breasts, especially if they are large and pendulous, often produces peculiar, scattered, pea-sized papules with subsequent pustulation or maceration and rapid erosion of these secondary lesions.

The macular form on the back of the hands and feet spreads in a red, fan-shaped manner directly from the web of the implicated fingers and toes.

The macular form in the bend of the elbows presents a rounded area of distinctly fawn-colored, delicately scaling tissue extending usually equally above and below the flexure of the joint so that when the arm is sharply flexed the two areas coapt strikingly.

The macular form in and about the umbilicus is apt to assume a dull-red-mahogany color and to become moist, the probable effects of secondary infection.

The macular form on the large flat surfaces of the body presents no variations from the lesions of the upper inner thighs which we have described as the type form.

The Macerated Form (10.3%). The seats of predilection of this type of epidermophytosis are between the toes, between the buttocks, between penis and scrotum and under overhanging breasts. The clinical aspects in the latter two areas have been previously described.

Between the toes, most markedly in the fourth interspace, we find a white, clean, parboiled, usually smooth, sometimes wrinkled condition, often of some depth. In extreme cases we have more than once noted a peculiar, ovoid, egglike structure seated at the bottom of the fourth interspace. This is seemingly an unattached, non-inflammatory cast. It can be easily raised and removed.

Between the buttocks beginning just anterior to the anus and in extreme instances running just beyond and above the opening of the intergluteal valley we find again the same white, clean, parboiled condition, but this time this peculiar tissue may be bordered by a narrow, red, rather

angry zone. As a further local peculiarity we have observed a longitudinal series of seemingly permanent pinhead-sized, dotlike depressions in the white portion of the macerated tissue.

Itching in macerated epidermophytosis may or may not be a serious subjective symptom. From a therapeutic point of view this type of the disease between the buttocks usually proves a most frightful stumbling-block; between the toes it usually proves decidedly recalcitrant; under the breasts and between penis and scrotum it is generally more amenable.

The Fissured Form (6.2%). This variety is not common. It is practically limited to the hands and feet and especially in those types which have been excited and overstimulated by treatment or by too much soap and water. Fissures in this disease, therefore, usually seem to be the product of overstimulation. As would be expected, they are apt to form in the drier types of the disease and thus we encounter them most frequently in the scaling and in the hyperkeratotic varieties of the infection. Their depth varies directly with the thickness of the earlier primary stage of the process, and thus we find them most highly developed in the calloused heel. On the fingers and toes their usual seat is at the respective junctions of the third phalanges and the metacarpals and metatarsals, practically always lying in a transverse direction. On the heels they usually assume a horizontal or oblique direction. When seen on the palms they run in any direction. At this especial site one sees one of the rarest of all types (save the scalp) of epidermophytosis. I refer to what I have previously nicknamed "the railroad map" form of the disease. Take, for instance, a railroad folder showing the many roads focussing at Chicago, or again the map of Pennsylvania, and note the network of lines. So in this type of epidermophytic palm one sees multitudinous, delicate, superficial, criss-cross lines, sometimes cuticolored, sometimes black, running over the palms.

The Papular Form (3.5%). Papular epidermophytosis is not common and there is not much to be said about it. Perhaps the scrotum is the seat of predilection and here we see rather large papules which tend to be isolated and to be a full red and to be moist. Elsewhere papules are smaller, and less red and less moist.

The Callous Form (3.4%). The callous type

is seemingly more prevalent than my statistics indicate. The favorite site is unquestionably the feet and the calluses develop in one of two places, over the transverse arch and on the heel. In the former situation the callus lies transversely, it is curiously translucent and it is apt to be of an orange tint. The surface is always smooth, the outlines always sharp. It varies in size, but it tends to fill up this entire space. On the heel the callus usually takes the form of a horseshoe surrounding and covering the periphery rather than the entire surface. Here the new growth is more apt to be uneven on the surface and to be opaque and the color to be a dirty white, but more than one example has exhibited a curiously canary-yellow hue. The depth of this callus varies greatly. This latter type is one of the most difficult to cure. If we succeed in macerating it sufficiently the underlying skin is of a pure pink shade.

The Keratotic Form (2.6%). We find this type of the disease more frequently upon the palms and soles than elsewhere. It is apt to present round, symmetrical, small pea-sized lesions sometimes projecting above the surface, sometimes imbedded in the horny layer with often a well-marked, surrounding, sunken rim. It seems very often to succeed a previous vesicle. The process does not seem to simulate the arsenical keratotic palm.

Warts, if they may be included at this juncture, occur rather more frequently than normal on the epidermophytic sole but apparently present no abnormalities. It is obvious that this pathologic surface offers easy ingress to superinfection.

The Lichenoid Form (1.7%). Lichenification may occur on epidermophytic surfaces as on any other chronically pruritic skin. The favorite seat is on the upper-middle inner thighs and here we find the typically brown or chocolate colored, sharply rounded, slightly elevated areas of varying size and with surfaces covered with delicate interlacing whitish lines. Itching, the source and origin of this secondary cutaneous phenomenon, is usually severe and if scratching is not prevented the infiltration and elevation of these circumscribed plaques continue to increase.

Fortunately, in this form of epidermophytosis, we have several methods of rather successful therapeutic attack.

The Purpuric Form (0.08%). This type is so rare and so closely follows the well-known objective characteristics of purpura that further description seems unnecessary.

Nail Infections. One hesitates to lay stress upon the clinical characteristics of any nail affection for the anatomical structure of the nail plate is so simple that many pathological processes present the same clinical features.

This dictum holds true in epidermophytosis. Nothing specific can be claimed for this disease. When infected the plate loses its translucency, becomes yellow and opaque, its surface becomes rough and friable and in certain instances becomes hyperplastic. At times the nail bed becomes involved and may thicken inordinately. One nail or all may share in the process. The cure is always difficult and usually extends over months.

Epidermophytides (2.5%). The word epidermophytide signifies a lesion accompanying epidermophytosis in some other part of the patient's body. Such a lesion is not produced directly by the plant itself but is probably induced by toxins derived from the actual epidermophyton growing on some other area of the infected individual's skin. We have analogous processes in tuberculosis and in the older, more familiar types of ringworm.

Unlike tuberculides, which are very multiform, epidermophytides, as we thus far recognize them, appear only as macules, sometimes small and numerous, but more often as large or larger sheets of well-defined, pink, delicately scaling erythema. Search for the epidermophyton always proves futile. The lateral chest wall, the abdomen, the thighs and legs are the usual habitats of this interesting type of the disease.

The treatment, of course, lies in the eradication of the causative and more or less distant infection.

As a final clinical observation let me state that hyperidrosis seems to be a relatively frequent concomitant of epidermophytosis, in all probability a precursor of this infection, for we recognize that moulds flourish on a damp surface.

Such is the long and complicated story of the clinical appearances of this polymorphous infection. It is surely an interesting disease, the late

recognition of which has decidedly lowered the incidence of certain inflammatory types which we formerly called eczema, eczema marginatum, dyshidrosis and certain examples of dermatitis infectiosa eczematoides. This disease must be rapidly becoming epidemic, as witness its recognized and steady increase in one man's private practice from three cases in 1910 to 148 examples in 1925. Naturally, a certain percentage of this extraordinary increase is due to a growing knowledge and recognition of the disease but this argument would prove convincing to a decreasing degree with the passage of years of experience. Under such circumstances it becomes necessary for us guardians of the health of our communities to familiarize ourselves with the disease in all its aspects and to combat its increasing inroads.

TREATMENT

Our last chapter is rather a depressing one. The cure of this disease, as is so often the case in medicine, lags far behind our clinical and mycological knowledge. Some few cases show a surprising inclination to disappear rapidly but the of these infections yield painfully slowly to our best therapeutic efforts.

Our first endeavors should be directed toward confining the invasion of the parasite to its present sites and toward preventing its spread to other members of the patient's family. All infected areas should be covered and kept covered by sterilizable garments, the hands within loose cotton gloves, the feet within cotton socks, the body within cotton underclothes. These should be worn day and night and replaced by similar boiled clothes every twenty-four hours. Silk and wool and leather should never be allowed to touch the infected skin. Patients should never stand upon a shower-bath floor without socks upon their feet. Sponges, cakes of soap and towels should be replaced by sterilized gauze, liquid soap and paper towels. Running water should be used when possible rather than water confined within a basin or a tub.

Secondly, we should bear in mind that water is always irritating to a skin infected with epidermophytosis.

Insistence on these facts is prerequisite to a cure. With these preliminary warnings thoroughly inculcated into our patients' minds what local treatment shall we prescribe? Let us realize

fully that at present we have no specific internal or external drug. What then can we do?

When confronted with vesicles we should open them aseptically as fast as they develop and then employ an aqueous solution of permanganate of potash 1:100, or a saturated watery solution of picric acid or, according to Dr. Graves of St. Louis, dust the freshly drained vesicle with aristol and apply with a glass rod the following: ether 2; balsam of Peru 4; flexible collodion 32. In addition to any of these methods we have found extremely serviceable a hot sandy beach on which the patient should walk barefooted for an hour or more a day, taking pains to crunch the feet deep into the sand at every step. Hands should be pushed into the hot sand but care should be taken to move to fresh areas on the beach every few minutes.

Sealing, macular and fissured forms are benefited more or less by one or more of the following ointments: Ung. Whitfield No. 1: Acid salicyl. 4, Acid benzoic 8, Adipis benzoat. 32; or Ung. Whitfield No. 2: Acid salicyl. 1, Acid benzoic 1.6, Paraffin moll, 8, Ol. cocois nucifer, 24 (this ointment must be kept cool or the oil separates badly); or Acid salicyl. 2, Sulph. precip, 2, Adipis benzoat. 32; or, according to French writers, an ointment of chrysarobin; but this drug is not successful in New England victims of the disease.

In macerated epidermophytosis we may try the methods advocated for the vesicular forms of the disease; or we may apply an ointment of crude coal tar, viz., crude coal tar 2, zinc oxid 2, vaselin 32; or an ointment devised by Dr. E. Wood Ruggles of Rochester, New York: phenol, 0.65, zinc oxid 6, ung. picis liquidae 10, ung. aq. rosae 20.

Calluses, keratoses and infected nails should be macerated in potash, neutralized with fats and then scraped with a dull knife day after day.

Lichenifications and hyperidrosis can be decidedly benefited by x-rays.

Despite any or all of these various therapeutic attacks the average infection of epidermophytosis will defy us for months. Time, patience and fidelity, however, will sooner or later triumph and, except in the most desperate case, the patient's long weary efforts will be crowned with success.

THE COUNTY SOCIETY AND COUNTY SECRETARY'S RELATION TO THE STATE SECRETARY*

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There is a very brief comment which may be made upon the relation of the county secretary to the state secretary which is pertinent and everything else which may be added is not pertinent. The relation of the state secretary and the county secretaries always is first one of service, later of fellowship and later of friendship, if the county secretaries and state secretaries agree and make it a relation of friendship, and that latter is the most pleasant but is by all odds the least important. There need be no personal friendship between the county society secretary and the state society secretary, but there must be cooperation and there must be service, and that spirit of service is the life of the county society and it is the life of the state society. The State Medical Society does not depend so entirely or absolutely on its secretary as does the county society. The State Society has its work divided among other officers and committees. The county society being a minor part has its work almost wholly centered in the elected officers of the society and the secretary becomes in almost every case the one single executive officer to whom every member looks for action. Being an executive officer of that society the secretary may if he will, and usually does, represent his county society without criticism and without question upon all matters which have to do with the state society.

The items which I have considered of importance concern the normal everyday, ordinary action of society work and are very few. Things move smoothly between the county society's secretary and the state secretary when the correspondence is properly attended to, when the items of membership and the collection of dues are properly reported. The state secretary is concerned with the matter of dues, the items of membership and the mailing list of the JOURNAL; and he can do nothing unless he is adequately supplied with up-to-date information from the county secretary. The addressograph man must

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have a correct list of members for the JOURNAL and if the county secretary fails to notify the state secretary of a change in address, the member does not get his JOURNAL. The member becomes disgruntled and eventually the state secretary gets an inquiry as to why he has not received his JOURNAL. We had some time ago a number of instances like that. There was a time when the Secretary of the State Medical Society was in the service of the U. S. Army and his work was not done by himself. Part of it was done by his wife, part by his office assistant and part by his secretary. It happened that many members, also absent, did not pay their dues and were dropped. They were honest and did not intend to defraud the state society and came back from the army feeling they were members in good standing and it never occurred to a good many of those men that their dues were in arrears. It developed later on that some of those men were dropped from the JOURNAL list. In many counties a new secretary had been elected and the old secretary had not transferred the records, with the result that misunderstanding was frequent. That thing has been about ironed out but it showed that every county secretary in transferring the record of his activities to his successor should and must transfer a living, active, up-to-date record of exactly what happened to each member of the society. There are many of our men who value a consecutive, unbroken record of membership very highly indeed, more highly than some of the younger men can entirely appreciate. Our county society has a provision in its by-laws that any man who has been a member of the society for 20 years and who has attained the age of 70 years, will upon his application become a life member of the society, obligated to pay no dues, entitled to all the privileges of membership except the right of suffrage. It is his for the asking. That makes the matter of continuous membership important. If the county secretary in transferring records from year to year will turn over correct ones, much of this misunderstanding will be avoided.

The State Society secretary in the course of the next few weeks or few months will notify every man who has not paid his dues that he has been dropped; but the communication will be made through the County Secretary, whose duty then becomes that of avoiding injustice by

promptly interviewing the member and reporting back. The State Society must not be considered a business institution, but it is important that dues be paid. The purposes of the Society are outlined in our constitution and by-laws. They have to do with fellowship and service more than with business. According to the constitution and by-laws I think we may expect to find that the secretary of the State Medical Society will always be willing to cooperate with the members in the payment of dues. I have found it so and I believe that Dr. Camp finds it so and I believe that Dr. Gilmore found it so. I believe it is proper that wherever possible if there is any doubt, the secretary of the society should settle the controversy in favor of the member and mark off any item which the by-laws will permit him to mark off, and make it a matter of record. Whenever that does not happen, whenever the state secretary's record is not clear, the secretary must have some item, some value, some question which he may enter upon his book as a reason for doing this or that and the county secretary should not hold it against that man as a personal matter. That has been done.

There is no greater joy than the feeling of comradeship and the feeling of friendship which develop between the state secretary and the county secretary when they cooperate and it gets to be a personal friendship which cannot be discontinued and which will last during the lives of both men.

THE RELATION OF PSYCHOTIC AND NEUROTIC DISTURBANCES TO HEAD INJURIES*

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The subject I propose to discuss is one of practical importance and should be of interest to the various branches of medicine and surgery.

It is a widely held opinion especially among the laity that severe injuries to the head are directly causative of mental defects, and that where psychoses develop in a person previously apparently normal with the history of a head injury, the two circumstances are almost invariably connected. While a study of the literature gives a certain amount of support to this view, it seems, however, rather probable that the

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part played by cranial trauma in originating organic and functional neuroses and psychoses is greatly exaggerated. Generally speaking, when such conditions appear and persist after a trauma, there existed a pre-traumatic degenerative or other predisposing condition, the traumatism merely acting as an excitant or intensifier of this condition.

Statistics do not support the view that trauma often directly causes definite psychoses. Harrington¹ found from statistics reported by several authors that the proportion of mental diseases ascribed to head injuries was comparatively small, and in a series of 5,429 cases which he investigated only 17 were diagnosed as psychoses due to head injury.

The whole question of post-traumatic neurotic and psychotic sequellae may be considered from two points of view: First, whether a cranio-cerebral traumatism can of itself directly cause anatomical changes which bring about psychotic and neurotic disturbances; secondly, whether a cranio-cerebral traumatism merely "lights up" a latent cerebral process to such an extent as to precipitate a psychosis or neurosis.

In this paper I propose to touch upon these two aspects of the subject in the light of what the literature shows and also to report some cases within my own experience.

In regard to head injuries being directly provocative of psychoses, of a tendency toward which there was no pretraumatic evidence, there are many cases in literature which seemingly support the affirmation of this view.

Richardson² in 1903 reported the case of a boy who had a severe injury of the head followed by mental changes and very frequent attacks of psychic epilepsy. A trephine showed no fracture but only some bulging of the dura. The boy was restored to normal mentality following the operation.

Glueck's case³ was that of a patient, previously of normal mentality, who, following a severe cranial injury, developed motor aphasia, epileptiform seizures, confusion and memory defect. Later he developed a hypomanic state.

Marie⁴ reported a somewhat similar case after a scalp injury over the motor area of Broca.

Cases reported by MacCurdy⁵, Rogues de Fursax,⁶ Thom and Fenton,⁷ and Harrington,¹ among many others, illustrate how brain concussions associated or not with cranial fracture

were followed immediately by a more or less lengthened period of unconsciousness. After regaining consciousness, the patient has a memory loss which may be retrograde as regards the traumatism; he is confused, disorientated, irritable, excitable. While most of these conditions improve and disappear with time, there is often a permanent change in personality.

Nouet's case⁸ was one in which visual and olfactory hallucinations followed an extensive gunshot right temporal injury, and which persisted when the author investigated the patient three years later.

In one of Harrington's cases¹ a man previously normal and industrious, of kind disposition, became entirely changed in personality following recovery from a cranial fracture. He became emotional, idle, irritable, and paranoid. He had to be committed to the State Asylum in which he died a few years later.

In one of three cases reported by Jacob,⁹ the trauma was insignificant and the brain concussion apparently only slight. Psychic disturbance was not observed till 12 hours later. This was followed by a period of confusion and disorientation lasting several months and there was a permanent hiatus in memory for the entire period of the psychosis. It is unusual that such a slight concussion should produce such severe mental disturbances.

The patients in the cases mentioned were mostly young, well developed, vigorous men, with no hereditary taints nor any history which might suggest a disintegrating cerebral process.

As may be surmised, the recent war furnished abundant clinical material of this kind. Most of these war cases were not, however, studied from the beginning from a psychiatric standpoint. Hadley¹⁰ had the opportunity of making a neurologic and psychiatric study of a number of such cases in the Walter Reed Hospital, Washington, D. C., and gives the clinical histories of thirteen of these in which hereditary influence or previous personal histories could apparently be excluded as incriminating factors in connection with the conditions developed. In four of the thirteen cases, there was commotio cerebri alone, without cranial fracture following a severe traumatism. Many of the cases were gunshot injuries and in some there was a residual foreign body. In all these cases there was the same general symptom-complex, i. e., a

more or less long period of unconsciousness; amnesia, retrograde or not; confusion, disorientation, and irritability. Hadley says that these patients, after a more or less lengthened period, adjust themselves quite well, but there is in some measure a definite and permanent change in the personality. Hadley did not observe either psychotic or neurotic manifestations in any patient in which there was no pre-traumatic taint.

Roeper¹¹ in 1920 published a number of cases dealing with slight mental disturbances after brain injuries. In some such cases the only apparent result was a slight mental change which Roeper calls a traumatic-psychopathic constitution, in which there is neither epilepsy, nor marked psychosis, nor functional neurosis. The features of this condition are affective and emotional instability, as shown in contrast to previous behavior; high temper; quarrelsomeness; dissatisfaction; depression; and intolerance for toxic thermic, optic, and acoustic stimuli. Such patients show intolerance for alcohol, intensive mental or physical work, lack of interest in their environment (without any real intellectual defect), dullness, lack of initiative, and poverty of thought. In the economic sense, Roeper considers that the reduction of efficiency in the traumatic psychopathic constitution may be placed at from 15 to 40 per cent. In the cases coming to Roeper's attention, traumatic epilepsy occurred rather frequently and mental changes were present in from one-fourth to one-third of those sustaining severe brain injuries.

Regarding the mechanism by which psychic disturbances may be directly brought about by concussion, Harrington¹ thinks that in the lighter types of simple concussion, the result of the traumatism may be an edema of the brain which gradually becomes completely absorbed. When the brain injury is extensive, it would seem not improbable that after an edema exists in a given area for a considerable period, it might set up degeneration of the cellular and other brain structures. Jacob⁹ remarks that it is known that commotion regularly causes diffuse changes in the nervous system, both in the cortex and in the basal ganglia, and that this fact must not be lost sight of in accounting for post-commotional disturbances.

In an individual with pretraumatic psychopathic traits, the post-traumatic picture may be

greatly colored or quite completely altered—such will include hysterical attacks, psychic epilepsy and paranoid trends as well as manic-depressive mechanisms in general.

From the point of view of whether a cranio-cerebral traumatism can be causative directly of a psychosis where none previously existed, it seems fairly reasonable to conclude from the literature that although there is no clinical entity which may definitely be termed a traumatic psychosis, yet there has been repeatedly found, following brain injury, a detrimental alteration in the personality of the patient, and which might be termed a traumatic-psychopathic constitution as Roeper calls it. When it exists, and it may exist after an apparently trivial cranio-cerebral injury, there may be a serious loss in the economic value of the patient which ought to be taken into account in determining compensation.

As Hadley remarks, the final result in actual cases depends upon the severity, type, and location of the injury. Almost any conceivable neurologic condition may be presented, and where grave defects coexist, permanent invalidism may ensue; even progressive mental enfeeblement may be observed.

Trotter,¹² in writing on this subject, mentions a group of phenomena following head injuries which includes headache, giddiness, defects of memory, lack of concentration and attention, alterations of disposition and mood, and certain kinds of mental deterioration. In his opinion, "the above group of symptoms is a common sequel to head injuries of all grades of severity and bears no relation to the amount of gross injury that has been inflicted." In those cases receiving an injury to the head by falling some distance to the ground for instance, the patient may receive a definite concussion of the brain, followed by a short period of unconsciousness after which the patient may sit up or even travel alone to his home only to develop a severe headache, dizziness, nausea, ringing in the ears, and a general feeling of lassitude.

In another class as mentioned also by Trotter, the patient may receive a blow to side of the head and in such cases concussion may be absent and the patient can describe in detail as to how the injury was received. He concludes that headaches, following trauma to the head, are due to definite organic disturbances to the lining membrane and its septa in the skull. And in

those cases accompanied by concussion, the brain is edematous.

Ewald Stier¹⁷ rather inclines to the belief that most of the post-traumatic neuroses are based on the desire for compensation and that where the symptoms—vertigo, headache, pain in the limbs, insomnia, mental and physical fatigue, etc., persist over a longer period than a year, and the patients are apparently permanently invalidated, the “lump sum” settlement results in a rapid recovery. He states that “accident desire” and “accident compensation” are factors;—therefore, “accident neuroses.” In this connection he states that where people are hurt while working at an occupation they really enjoy and which is a source of stimulation, traumatic neuroses seldom develop. For instance, jockeys who receive severe head injuries, seldom develop a neurosis. The same statement applies to football players who frequently have cerebral concussion. He further states that the symptoms above enumerated may be produced as the result of fright following an earthquake, or receiving bad news from home, etc., producing a disturbance in the vegetative nervous system.

I will now consider what the literature shows in regard to another phase of the subject; that is, whether a cranio-cerebral traumatism acts as an excitant of a latent cerebral infection or as an intensifier of such a condition pre-traumatically manifested. While it seems difficult to understand and contrary to the facts of neuro-biology that a single traumatism could directly cause a progressive neural degeneration, much less a progressive neural toxi-degeneration, however, it is plausible that a traumatism may be a factor in setting free agencies which can bring about such conditions.

As regards organic brain disease, it has been supposed that cranial traumatism can cause cerebral tumor, disseminated sclerosis, epilepsy, etc.

Mendel¹³ reported some cases of cerebral tumor apparently associated with cranial trauma, but the English authority, Wilson¹⁴, states, in connection with this that although he observed a vast number of cranial injuries during and after the war, he never found any evidence that cranial trauma may originate such a tumor.

Disseminated sclerosis is now considered as an infectious process. Wilson quotes L. F. Barker¹⁵ who excludes trauma as a cause of sclerosis, although he thinks that it may “light up” a latent

case or exacerbate one already manifest. Wilson, himself, in 900 war neurologic cases, observed none with true traumatic etiology and saw only two cases in his practice in which trauma could be considered as a “lighting up” factor. Yet it is often alleged as a cause in courts and in compensation claims. In regard to one such case, Wilson says, “If we dismiss the hypothesis of mere coincidence, we are compelled in fairness to suppose that a latent organic nervous disease (sclerosis) was “precipitated” by a relatively severe injury, though we may be incapable of framing any reasonable theory as to how such an injury might act.”

Matzdorff¹⁶ quite recently reported a case of multiplex sclerosis cerebros spinalis, observed for three years, the first symptoms of which appeared ten days after a cranial traumatism in a previously apparently healthy man, age 22 years. Matzdorff considers that the trauma created a *locus minoris resistentiae* for existing pathogenic microbes in this case.

The question of post-traumatic epilepsy is a constantly recurring one. Wilson quotes war statistics which show that of 18,000 cases of gunshot or other cranial injuries, less than 5 per cent. developed epilepsy. The study of these and other statistics shows that something more than local tissue changes is necessary for the production of epilepsy; and, according to Wilson, the determining agent is an inherited or inborn constitutional predisposition. In 80 per cent. of his own cases of traumatic epilepsy, Wilson found a history of such a predisposition. Therefore, only a very small percentage of cranial trauma cases develop epilepsy, and by far the greater part of this small minority show a previous disposition to it.

There remains the question of neuro-syphilis, tabes, and general paralysis. Can a cranial traumatism initiate a morbid process on the part of the spirocheta pallida which would otherwise have remained latent? Wilson mentions the case of a man, previously apparently healthy, who, within a month after a severe shock (without visible injury) showed the initial symptoms of general paralysis. Discussing this case, Wilson remarks that in general paralysis there are known periods of remission and of exacerbation. The case quoted may have been one of ordinary exacerbation from within. The modifications arising in the course of general paralysis are the

result of intrinsic, not of extrinsic factors. Wilson is of the opinion that unless it can be proved that the first symptoms of general paralysis or of paresis actually arises within, say, 48 hours of an accident or are augmented within this period, it is illegitimate to argue for a causal relation between the traumatism and the symptoms, as it is generally conceded that in genuine traumatism of the nervous system, symptomatology is practically continuous from the very beginning of the traumatism.

We may thus conclude that where pathogenic organisms are present in the body, a head injury provides a suitable breeding ground where they may settle and produce a degenerative process resulting ultimately in a neurotic or psychotic condition. A cerebral traumatism, like a traumatism anywhere else, although it may heal, yet may leave an anatomically weakened region which is less resistant to disease than if it had not been injured. Judged in this light, a cranio-cerebral traumatism, even a simple concussion, may be of very great etiological importance in starting a degenerative cerebral process with resulting neurotic and psychic manifestations. Although such results may be observed in some cases, we must not, however, generalize. Experience gained during the war has shown that the general nervous and psychic symptoms accompanying concussion, both cranial and spinal, pass off eventually with a complete restoration to normal; but if these symptoms persist, in the absence of any evidence of objective changes, it may be taken as a rule almost without exception that the case has ceased to be one of concussion and that some other underlying motive is causing the symptoms. Very frequently such a motive is the desire for compensation which is a natural human failing. Motives connected with pecuniary compensation mostly have a great deal to do with simulation and exaggeration of nervous and psychic symptomatology which almost invariably rapidly disappear as soon as the claim is settled. Claims having a basis of this kind have multiplied since the introduction of compensatory legislation and there is perhaps no type of injury in which certificates are so easily given by the medical profession as in so-called "nervous" injury cases, even years after the genuine effects of the injury have vanished.

Matzdorff thinks that Wilson's time limit is too short and that the time limit for appearance

of symptoms should be extended to three or four weeks. Matzdorff thinks that traumatism by a commotion of the central nervous system creates in it a *locus minoris resistentiae* which can be attacked by a simultaneously existing or shortly thereafter arising infection or intoxication. The local disease is thus due to the injury. The injury to the central nervous system may be so slight that, of itself, it might have run a symptomless course were no concomitant disease process present. But under such circumstances the first nervous symptoms ought to appear shortly after the injury.

Furthermore, Matzdorff thinks that when any part of the central nervous system has been severely damaged by an external traumatism, such a region, even after clinical recovery, still remains a *locus minoris resistentiae* which offers a point of attack even after years for intoxications or infections. Inversely, any position in the central nervous system in which a toxic or inflammatory process has once been localized can be more easily involved by a traumatism than completely healthy parts. I wish to cite the following case histories, presenting rather interesting points.

Case 1. On July 30, 1924, examination was made of M. S., aged 22, married, with a history of having been perfectly well until June 25, 1924.

While walking along the street at the corner of Van Buren and Wells Street she was struck on the head by some falling bricks and was rendered unconscious for perhaps an hour or two. The x-ray reports are negative for any fracture of the skull, but showed evidence of a fracture of some of the small bones of the right foot.

Neurologic examination today shows that the eyes respond normally to light and to accommodation. The optic nerve discs are normal. There is no evidence of any cranial nerve paralysis, nor of paralysis of any member of the body. The deep reflexes in both the upper and lower extremities are present and lively. There is no ankle clonus and no positive Babinski sign on either side. She has no bladder disturbances and no disturbances of the bowels. There is no ataxia of either the upper or lower extremities.

The patient's complaints are pain in the head, some dizziness, and weakness of the lower extremities on attempting to stand or walk. She is rather slow in her response to the tests on examination and in her general conversation.

Taking into consideration the history of the case, along with the clinical findings, a diagnosis of commotio-cerebri is made, which may arise from such an injury to the head without skull fracture and without any real organic changes in the brain substance.

In this case a good prognosis should be made, but

it is entirely too early to make a definite statement as to just how soon recovery will take place. Considering the patient's welfare as being the most important thing, she should be placed in some good health resort where she will not be in contact with members of her family. She should be given massage and baths and psychic treatment, as well as careful attention to the elimination, diet, and sleep.

Case 2. C. L. gives a history of an injury to the head and spine on February 1, 1924. The conclusions must necessarily be based upon the history given by his wife and the superintendent of nurses at the hospital.

The history obtained brings out the fact that his disposition has changed materially since the injury; that he has wandered aimlessly away from home at different times; that he has shown mental fatigue; that at times his temper has gotten the best of him, and still at other times while in the ward, according to the nurse's statement at the hospital, he imagined that other patients were making remarks about him. His wife states that she has had to follow him around the house as he seemed not to be able to get around unassisted. He showed defect of memory and would become mixed up as to where he was. Some days he is very decidedly depressed and at other times is in rather a satisfied state of mind. Patient has been seen on two occasions and a physical examination shows that the eyes respond normally to light and to accommodation. There is no evidence of any paralysis of the eye muscles. The optic nerve disc is normal on both sides. There appears to be a very slight paresis of the left side of his face. The extremities are normal; the deep reflexes are all normal; Babinski sign is absent on both sides, and he gives no history of any bladder or rectal disturbances.

On first examination he was rather indifferent in his attitude. He did not care to be bothered and appeared rather fatigued. He complained of pains in his head over the site of injury, on the right side. He was rather indifferent in his answers to questions and apparently became easily tired out after being questioned for a certain length of time.

No definite delusions or hallucinations could be developed. He appears very depressed mentally. On second examination, the following day, he was much more alert mentally and answered questions much more promptly.

The conclusions are that the case should be classified as one of post-traumatic constitution, based upon the history given, including especially his change in personality, the presence of headaches, his increased irritability at times and his outbreaks of temper; his tendency to brood over his complaints, and his inability to concentrate his thoughts. Such conditions may arise following a head injury, either accompanied or unaccompanied by any definite changes in the brain substance itself. Sufficient time has not elapsed to allow one to make a definite prognosis in this case. Sometimes such cases improve very materially in the course of time. On the other hand, mental deterioration may develop later on.

Case 3. O. O., aged 37 years, married, blacksmith by trade. Patient gives a history of having received an injury to the skull on December 28, 1923, when a plank, 2 inches by 8 inches and 6 feet long, fell a distance of 25 to 30 feet from a scaffold and struck him on the head. This rendered him unconscious for a time and after he regained consciousness he was taken to the hospital where he remained three days and showed some improvement during that time. He was then allowed to return home. At that time he complained of headache and attacks of vomiting. He stayed in bed for a period of about six weeks, but he was not able to return to his work until three months had elapsed from the time of his injury. Then he worked two days and had to quit because of disturbance from the noise. He stayed at home for two weeks and returned to work, but the noise still troubled him, and after working for about two weeks he had to quit entirely. He was then transferred to the receiving room where he has been taking orders and works about five hours each day.

Examination reveals the fact that he has dizzy attacks at times, especially when he bends over; he has fears that he will not get well; he also has fears when in a dark room, and has to depend upon someone's being with him. He has decided mental outbreaks, and it matters not whether he is talking about pleasant things or sad things. He received a letter from home and although the letter stated that his family were all well, he began crying. He shows some outbreaks of temper at times. Objective examination reveals the fact that he has a fine tremor of the hands, that he perspires easily, and that he has a low blood pressure.

There is no evidence of organic disease of the central nervous system. The eyes are negative and the optic nerve discs are normal, showing no evidence of intracranial pressure.

The conclusions are that the patient is still suffering from the effects of the trauma to the head, and his trend of symptoms would lead one to diagnose the case as one of commotio-cerebri. He should eventually recover from this state, but it will take several weeks for him to overcome these emotional manifestations.

It is recommended that he be given light work, that he be placed in the hands of some one competent to go over his complaints with him from time to time, and develop in him all the optimism possible. At the same time careful attention should be given to his environment, to his sleep, and to his elimination.

GENERAL CONCLUSIONS

The general conclusions that I think may fairly be arrived at are the following: Brain commotion does not of itself cause tumor or other organic disease of the brain, but where such appears after a traumatism, there already existed some underlying cause. The traumatism merely exacerbates this existing condition. This applies to existing bodily infections which, prior to traumatism, may have been latent.

During the recovery process from a traumatism, temporary psychoses and neuroses may be observed in individuals previously entirely normal and which disappear on recovery from the injury. In a percentage of traumatic cases a greater or lesser degree of change in the personality of the patient may be permanent after a brain traumatism. In these patients there was probably some pre-traumatic disposition not manifested in the history. Where a history of manifest cerebral changes is known the results of such changes may become accentuated after traumatism. Where the neurotic phenomena, as already given, exist for more than a year without evidence of organic changes in the central nervous system, "the lump sum" settlement will hasten a cure.

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DISCUSSION

Dr. J. P. Simpson, Palmer, Ill.: A very striking case, illustrating the subject under treatment is that of an 18 year old boy of good family history, who was struck on the head by an empty beer bottle, while watching the Hallowe'en pranks one night.

He came to me at midnight and I applied three sutures to a scalp wound, and told him that this trauma might lead to brain trouble, even to brain abscess, years afterward. Professor Bauduy, of Washington University, had told of a brain abscess that developed in a man twenty years after he had been struck upon the head during the Civil War rioting in St. Louis.

When about twenty-five years old this man, that I had treated, married an excellent good natured young lady; and they got along happily for two years or more, and then he began to develop a morose disposition, with fits of jealousy, that had absolutely no foundation in fact. In his dealings with people of the community, he would resent the least approach to familiarity.

He was placed in the asylum, and I still forgot about the beer bottle incident, until the hospital physician made inquiry, through his mother, if he had ever had such injury. This fellow, soon after the injury, had

told his mother of my warning, but could not tell of it after his mind became unbalanced.

Another case comes to mind. The family history, however, might easily account for insanity. Cousins married and produced a large family—some of them of good average intelligence, and some of the moron type. The man of whom I speak was one of the brighter ones of the family. He was very deaf from early otitis. While walking on the highway, a runaway team, carrying the broken buggy pole between them, ran him down, striking him on the occiput with the pole end. Within four years he became violently insane. Got him a hunting license and carried a revolver. One sister had committed suicide ten years before. We sent him to the asylum. His brother thought that we had "railroaded" him there. Paroled him out, but was very glad to let him be taken back within a week or two.

Dr. Charles F. Read, Chicago: The statistics for the State Hospital admissions for the past few years show very few cases in which trauma has been quite evidently the source of the mental disorder, from one-half to one per cent. So not many people apparently are so injured about the head as to require detention in state hospitals. There is no doubt but what trauma precipitates mental abnormalities. I remember two cases of boys who suffered severe traumas about the head and who came to us because of psychopathic behavior. In neither one did we have a history of the behavior of the patient prior to the injury, so we could not tell whether the condition was primarily traumatic or merely precipitated by the head injury. Another case was that of an old lady struck by a taxi who almost immediately, according to the relatives, developed symptoms characteristic of senile dementia. Apparently the senile condition was lying dormant and was precipitated by the injury.

As to traumatic epilepsy, we must be very careful in determining whether the trauma was the cause of the fit, or the fit the cause of the trauma.

As Dr. Hall has said, the traumatic neurosis is the means of escape from a disagreeable situation. We are all quite familiar with the use made of this mental mechanism by many individuals during the World War, our so-called shell-shock cases.

The diagnostic points to be emphasized are, first of all, a very thorough history of the individual prior to the injury. What sort of a person has been injured? What sort of make-up did he have? The next of course is the nature of the injury and the immediate symptoms. Following that, was there a gradual or sudden development of the mental disorder or was there a period over which no symptoms appeared and then a development perhaps consequent upon stress or strain in the patient's life and the desire to secure compensation? And finally the symptoms in themselves, confused states, periods of violence, susceptibility to alcoholic stimuli, and gradual let-down.

Dr. Edward Bowe, Jacksonville: No single question in medical legal procedures has discouraged me as much as the very question before us here.

At the present time, in the economic and financial condition of the country, this question is important, in connection with placing the world's war veterans in their proper place.

And, as Dr. Hall has well said, in the case of personal injury, the question has a broad field.

These rehabilitation cases pass through the hands of men we know to be good men, but in the hands of some man able to determine the pathology, the whole case is simple.

There is an outstanding prejudice both among attorneys and physicians against this type of case.

Dr. George W. Hall (closing): There are several things of interest to me because one is interested more in the subject that he comes in contact with frequently.

Now, we could continue this discussion for an hour or two and not be half way through. There are some things of vital interest. As to war injuries we know there were a great many neuroses developed in the war. When a young man was injured while in the line of battle he didn't develop a neurosis but the individual who received a certain concussion or was gassed, and so on, was the one most likely to develop a neurosis.

Reasoning, then, from cause to effect, one can easily infer that the first patient didn't need any reason to excuse him from going to the front again, whereas the other individual, not having any evidences of injury, was more easily placed into a state of mind which would come under the classification of a neurosis.

Another thing that has been brought out is that the individual who simply treats the injury is not a real physician. He must treat the patient. And unless we are able to look at the patient in his entirety, then we are not successful in our treatment of that individual.

We must also be just as patient as possible with these individuals who do show a certain train of symptoms such as mentioned in the paper, because that individual is just as sick as though he had a leg taken off. A man mentally sick is just as sick as an individual who has an abscess or appendicitis. So many of us are not willing to take that into consideration. I recall several cases of just that kind where the physician does not seem to understand the mental state of the individual.

There is something else that I think every physician in this state should fight for; and that is for such legislation as to permit the possibility of proper conclusions in these cases, which is not being done at the present time. Industrial boards are all right. I think they are trying to make every effort to be fair. When we get a judge and two lawyers and doctors on either side and x-ray specialists, just as many on one side as the other, one swearing there is a skull fracture and the other swearing there is not, what is the result?

I saw a case last week. Three competent x-ray men were on one side and three on the opposite side. They were looking at the same plates. Three insisted there was a skull fracture and the other three insisted there was not. What are you going to do in such cases?

There is only one way to do, to get a competent medical board appointed and get it out of politics. We should have men willing to serve and have the judgments and opinions of those men summed up to be acted upon. Until that time arrives these patients will continue to be neurotic, because an attorney can make a man neurotic by suggesting a great many things. I am satisfied I have seen a great many cases develop through the actions of the attorney. He can take a patient who was working for a number of months apparently all right, and by suggesting to the patient produce a long trend of symptoms. As a result of it the lawyer gets a good fee and the patient gets a very small amount for his compensation. In other words, if the patient could have been kept at his work he could have become an asset all that time and perhaps a permanent asset to the community instead of a liability.

SOURCES OF INFECTION. CASES AND CARRIERS*

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IOWA CITY, IOWA

We hear from time to time of some very weird sources of infection. From one place we hear that letters piled away in a trunk for 27 years were a source of scarlet fever. Now by definition a source is a place in which infectious material grows, multiplies and increases itself. If we would exclude milk and a few other special conditions, we find that the principle source of infectious material is the case of the disease in the human being. It is there that the infectious agent finds temperature, moisture and soil to its liking and grows luxuriantly during the early stages of the disease.

In fatal, fulminating cases this growth goes on almost unretarded, while in acute infectious diseases of short duration the defensive devices of the body are brought into play and ultimately prevent growth and multiplication. It is evident then that the human case of the disease is the greatest source of infection if we are to measure them either by the amount of infectious material given off or by the virulence of the organisms eliminated. If, then, we propose to institute preventive methods for the spread of infection it is here that we must center our attack for no doubt somewhere around 90 per cent of the cases of infectious diseases and infectious agents come more directly or indirectly from another case.

*Read before the Inter-State Post Graduate Assembly of America, Milwaukee, Wis., Oct. 27-31, 1924.

Consider for a moment the spread of measles and whooping cough. Here we have two diseases in which, unfortunately, the characteristic symptoms of the disease, and the one by which they are usually diagnosed, does not present itself for 24 or 48 hours after the onset of illness. On the basis of careful field studies some epidemiologists are inclined to think that certain cases of measles and whooping cough give off infectious material for as long a period as 5 days before the characteristic symptoms of whooping cough or the characteristic measles rash occurs. In studying many outbreaks of these diseases I have come across instances that could only be explained on the basis of this comparatively long period of infectiousness prior to the characteristic symptoms. If then we are going to do anything in the prevention of measles and whooping cough we must segregate those cases at the onset of illness, which is 2 to 5 days before any characteristic symptom occurs. All of us with experience know full well of the many milk, or abortive cases of scarlet fever encountered in a busy practice. Let no health officers or health organization flatter themselves that they are getting at the source of the spread of infection as long as these sources are walking the streets. Cases are and will remain for some time to be the most potent source of infection. Mild, missed and abortive cases will long remain more dangerous to the public at large than frank, severe or typical cases. Attention then must be centered around the fact that the largest amount of the most virulent infection comes from cases of disease.

The next most important source of infection is the human carrier of infectious agents. With the exception of the incubatory carrier all carriers are immune individuals. Notwithstanding their immunity to the disease their tissues are a more or less acceptable soil for the growth and reproduction of the infectious agent. The tissues of the carrier are probably not as good soil for the growth and reproduction of the infectious agent as that of a susceptible individual, but it grows there nevertheless.

An individual who is a carrier of infectious agents, while not manifesting the characteristic symptom of the disease, is an acceptable host from the standpoint of the biological requirements of the infectious agent. The body cells and the bacterial cells live in a systic relation.

It is, as if there were two elements involved in immunity. One element would be the immunity of the body against the mere presence of the infectious agent. The other element would be the immunity of tissues against the toxic products of this parasitic growth. The susceptible individual has neither of these and while the carrier has immunity against the toxic products if any are formed, he does not have immunity against the invasion of the infectious agent.

Infectious agents from carriers are frequently, but not always, far less virulent than those from an active case of the disease as is shown by the studies made in many laboratories. That there is a degree of virulence in organisms from carrier cases is well known, and to this fact alone can be attributed epidemics which carriers frequently cause.

The striking variations reported in the virulence of the organisms isolated from diphtheria carriers attracted my attention some years ago.

The variations were too wide to be explained on any other basis than that we were dealing with two or more factors. Each factor could remain constant within itself but with the varying proportions of each factor as a component of the whole. The results of various investigators were bound to be vastly different and confusing.

The problem was then to unscramble the carriers in such a way that the various factors would be grouped by themselves and could be studied alone.

The grouping which we now use is the result of "trial and error method." It utilizes the information received from the laboratory to its fullest extent and makes it an integral part of the working program of the field epidemiologist. As sound medical or surgical diagnosis is based upon a history, a physical examination and laboratory reports, so are the sound administrative public health measures based upon case records, epidemiological investigations and laboratory reports. If these cannot be correlated and brought into harmony, chaos and confusion results to the detriment of public health.

The classification of carriers used is one that has a basis on all three factors that goes to make up a sound diagnosis.

For the purpose of co-ordinating the office, field and laboratory studies in diphtheria carriers we have used the following classifications:

1. Incubatory.
2. Convalescent.
3. Direct Contact.
4. Remote Contact.

Experience has shown that this classification is sound in principle and practice. This classification brings the office, field and laboratory studies into closer harmony and co-operation than any other grouping of the facts that we have tried.

Incubatory Carriers. An incubatory carrier is the individual upon whom we have identified infectious agents within the incubation period prior to the onset of the clinical symptoms. Those of us who have taken throat cultures in large numbers know full well that by the time the report returns from the laboratory some children will be found ill with diphtheria. These children carried the organisms for a short space of time without symptoms, hence they are carriers. They developed the disease within the incubation period from the culture taking so they were incubating the disease at that time. They are therefore, called incubatory carriers. Incubatory carriers harbor organisms that are 100% virulent. They have been tested on human individuals and proved so, which is probably better than the test on guinea pigs.

The degree of danger from incubatory carriers is high because of the fact that the bacilli are of disease causing type in all instances.

The length of time of the menace from incubatory carriers depends upon how soon striking symptoms present or on how long it takes the epidemiologist to locate the individual. Well directed epidemiological work on incubatory carriers will materially reduce the amount of diphtheria spread by mild, missed or abortive cases.

All known carriers should be given daily inspection for the maximum period of incubation. By this means the individual who is an incubatory carrier can be segregated at the first rise of temperature or other clinical symptoms.

If he can carry virulent bacilli for a period longer than the incubation period, he is an immune and does not need antitoxin, Schick Test or toxin-antitoxin mixture.

Probably all cases of diphtheria might be considered incubatory carriers for that short period between the time they have connected up with the infectious agent and the time the clinical symptoms occurs.

If careful throat cultures are made during this time the bacilli will be found and the person is designated as an incubatory carrier. Sometimes on receipt of the laboratory report these cases will merely be the sore throat stage. The etiology of this sore throat having been determined bacteriologically, the case should be comparatively mild if antitoxin be given in adequate doses immediately.

Convalescent Carriers. A convalescent carrier is of course an individual who harbors infectious agents after the clinical symptoms have ceased. These individuals have an immunity to the toxin of the disease but do not possess sufficient bacteriolytic substance to prevent multiplication of the causative organism. These individuals are of interest in the spread of infectious diseases chiefly because of their mobility.

Several well directed contagious disease hospitals and health departments use the following method of releasing persons from diphtheria quarantine.

Nose and throat cultures are made daily after the twelfth day of illness and the patient released from quarantine when two successive sets of these cultures fail to show the presence of diphtheria bacilli.

In a careful study of over one thousand cases released in this way it was found that the stay in the hospital was as follows:

1 week	100%
2 weeks	64%
3 weeks	29%
4 weeks	16%
5 weeks	8%
6 weeks	4%
7 weeks	2%
more than 7.....	2%

It was striking that it took eight weeks to reduce the number of convalescent carriers to 2%. This is about the proportion found in the population at large.

When this point was reached, virulence tests were made and the patient released, if the organism was found to be non-virulent. Eighty-five to 90% of the convalescent carriers of diphtheria, that we have studied, have virulent organisms and they constitute a real menace to the control of the spread of infections. Our figures show however, that as we recover the organisms further and further from the time of the attack the per cent of virulent organisms falls. This study is not ready to report at this time but will be presented later.

Direct Contact Carriers—The direct contact

carrier is a carrier who is in direct contact with the case. Although he gets his organisms directly from the case where they are most virulent his immunity is sufficiently high to prevent the development of the disease. This individual usually has a high personal immunity and if the experience is repeated, comes to have little fear of contracting contagion. Many physicians and nurses are in this group. I have several times used diphtheria bacilli from my own throat for class-room demonstration. On one occasion I used a meningococcus for class work which I had recovered from my own throat.

Direct contact carriers are always immune and always highly immune. If I had evidence that a person had been a carrier of virulent diphtheria bacilli for a period longer than the incubation period of the disease I would feel that this person was immune as thoroughly as he would if he had a negative Schick test. A direct contact carrier is immune and will not contract the disease until some unforeseen circumstances takes away this immunity, which does not frequently occur.

As a result of careful studies, as yet too small to use for generalizations, it appears that from $1/5$ to $1/3$ of all people coming in daily contact with a diphtheria patient will pick up and retain the diphtheria bacillus. The proportion of these people who develop the disease as a result of this is in direct relation to the age group susceptibility.

Where there are no children in the quarantine, the attack rate of the disease is low because about $2/3$ of all adults are immune to diphtheria. This means that there is a correspondingly high rate of direct contact carriers. Diphtheria bacilli have been of virulent type in approximately 50% of the direct contact carriers we have examined. They therefore, constitute a real menace to this extent and there should be adequate administrative control.

Remote Contact Carriers—A remote contact carrier is a carrier who has *not* been in contact with the case but who has obtained his organisms probably from some other carrier. This type of carrier is usually immune but such great reliance cannot be placed on this evidence. If he is harboring virulent organisms for a period longer than the incubation period of the disease he is of course immune.

If, however, the organisms found are non-virulent diphtheria bacilli, this finding has little or no significance regarding the immunity of the individual.

Organisms recovered from these remote contact carriers are found to be non-virulent in such a large proportion of cases that they can all be considered non-virulent so far as public health administration is concerned. Meador of Detroit, recently allowed 97 children who were remote contact carriers to return to school and no case of diphtheria developed among the other school children that was traceable to these remote contact carriers. Evidence is therefore accumulating that our great fear of this type of carrier is unfounded. When we are fully convinced of this, we will let this type of carrier go and come without let or hinderance.

To illustrate by an example: After the cases in a certain outbreak of diphtheria were quarantined, cultures were taken of all the school children's throats. Of the 330 children only 7 were found to be harboring diphtheria bacilli: A rather small proportion for the season of the year. Of these 7, two developed the disease within the incubation period and were therefore incubatory carriers. There had been no cases of diphtheria among the other five, therefore none of these were convalescent carriers.

One of these children was however, from a family just released from quarantine for diphtheria and was therefore a direct contact carrier. The other four were remote contact carriers.

The disposition of these cases was as follows: The incubatory carriers were showing early symptoms of diphtheria when the laboratory report was received. They were immediately quarantined and given adequate doses of diphtheria antitoxin. In this particular study there were no convalescent carriers, but if there had been, they should have been placed in the modified quarantine provided for diphtheria carriers.

The direct contact carrier was placed in the modified quarantine until the culture would show non-virulent organisms or until two successive negatives could be obtained, 24 hours apart.

The remote contact carriers were kept under observation for the incubation period and then allowed to return to school without reference to the flora of their throat.

CONCLUSIONS

1. Human beings with and without symptoms of any disease are the greatest factor in the spread of infections.

2. Competent follow-up work on carriers will do much in locating mild missed, or abortive cases which spread much infection.

3. To adequately engage the carrier problem it must be subdivided into its constituent parts, rather than to outline one administrative procedure for all parts of the problem.

4. The investigation of the contacts of incubatory carriers will yield much information necessary to prevent the spread of infection, because these cases are carrying virulent organisms.

5. The convalescent carrier should be subjected to administrative control because of the high proportion of virulent organisms he carries.

6. $1/5$ to $1/3$ of the people in contact with cases of diphtheria in the home pick up the organisms to which they are exposed. $1/2$ to $3/4$ of these people are known to be harboring organisms of virulent strain.

7. Remote contact carriers of diphtheria have so little significance in the public health problem that they are included here only for the purpose of completeness. The few of them that are found virulent can be easily explained as having been in contact with mild, missed or abortive cases without their knowledge.

8. More serious study of the outcome of contacts with incubatory carriers is warranted. More control of the convalescent carrier is warranted. More strict isolation of the patient to reduce the number of direct contact carriers is warranted. More leniency with remote contact carriers can be allowed with safety to all concerned.

PREVENTION OF GOITER*

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For thousands of years goiter has been recognized as a mysterious affliction causing deformity. Only within recent years has it been recognized that goiter is not only the cause of deformity, but often is the cause of cardiovascular changes, changes in emotional or mental states (sometimes even insanity), defective or abnormal development, exophthalmos, tremors, insomnia, weakness, et cetera.

Its distribution is world wide. No country is free from it. Bram of Philadelphia conservatively estimates that over five million people of the United States are suffering from goiter, and that about half of them have no medical attention, or if treated at all it is by chiropractors, osteopaths, Christian science, patent medicines, et cetera.

The largest number of deaths in any one general classification in the registration area of the United States has for several years been in that of cardiovascular disease. Eighty per cent. of the cases of cardiovascular disease that we see are directly attributable to goiter. In addition to the deaths so listed, there are also many that are listed under other causes, such as apoplexy, in which goiter may have contributed to the shortening of life by its effects on the cardiovascular system.

Goiter is one of the most insidious diseases which attacks man and animals. The sum total of its ravages throughout all ages and in all lands is still unrealized. It often attacks the most beautiful girls, the best mothers and the most famous athletes. It seems prone to attack those who are otherwise perfect.

This disease was formerly thought to attack only adults, but in recent years it has been recognized in children and even in infants. A disease, degeneration or new growth when situated in other organs, does not have the same course and result as when situated in the thyroid, because the thyroid when diseased or the seat of degeneration, inflammation or new growth develops changes in function that affects seriously almost every structure in the body. Results of thyroid hypo, hyper or dys—function are so varied in kind and severity that the problem becomes one of great magnitude.

The goiter problem of today is not only that of the treatment of tumor in the neck, but includes prevention and early recognition and treatment before cardiovascular changes occur. No great progress can be made in prevention without adequate knowledge of the situation. This can only be obtained by wide surveys correctly and impartially made. The only group of people who can do this much needed work completely is that of the general practitioners. On them must fall the responsibility for adequate information on which to base prevention measures.

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On them must fall the responsibility of early diagnosis and early treatment.

Most general practitioners are alive to the importance of the subject but are somewhat confused by the variety of opinions and theories expressed by the men who have given it special attention. This confusion is not lessened by the absence of standard nomenclature and classification. Almost every man giving special attention to goiter has his own nomenclature, classification and definitions. The general practitioner is properly looking to this group of men for guidance. They give him information in many languages. The general practitioner is properly looking to this group of men for actual facts.

Each surgeon, pathologist, internist, radiologist, general practitioner and each governmental agency, such as City Health Departments, State Departments or Health, United States Public Health Service, et cetera, is working independently, using his own nomenclature, his own definitions, his own standards. The general practitioner is asking of this group of men and they are asking each other questions that can only be answered after information from all of them is brought together and reported in the same language.

The reduction of mortality cannot be effected to any great extent by the efforts of the goiter surgeons. The reduction of mortality and invalidism from the effects of goiter must come, in the main, from prevention.

There is need for definite information which can only be supplied by the general practitioner in regard to the prevalence of goiter, and also in regard to the results of efforts of prevention. Before preventive measures can be standardized and the success of such be evaluated, complete information must be obtained. While much of this information must be supplied by the general practitioner, yet some organization that can tabulate, classify and make definite deductions from this information must cooperate and assist. This particular duty, without doubt, falls upon the public health men. The public health men should tabulate, classify and report all such information when obtained. They should assist and cooperate with the general practitioner in making needed surveys and establishing preventive measures.

A survey should be made at least once a year, especially of all children in the public schools.

This survey should be conducted by the local profession and the public health men.

Doctor Earle G. Brown, with the assistance of the other members of the profession of Topeka, Kansas, has recently made a goiter survey of the grade schools of Topeka. Most startling and surprising conditions were disclosed. The incidence of positive enlargement of the thyroid gland in all the white girls in the grade schools of Topeka was 44.4%; of the colored girls, 56.7%; of the white boys, 33.2%; and the colored boys, 46.2%.

One such survey is of value in so far as it discloses the actual situation. But one survey is not enough. Periodical surveys should be made. All physicians should report the results of their observations, especially the results of preventive measures so that actual facts may be known. Correct knowledge must be obtained before measures can be instituted that will lessen the incidence of goiter, greatly reduce the number of cardiovascular afflictions, lower the actual death rate and lessen the number of invalids among our people.

In the light of our present knowledge, what can be said with certainty as to measures for the prevention of goiter? It seems to be fairly authenticated that: Deficiencies in the chemical constituents of the body, such as deficiencies of iodine, calcium phosphorus, potassium, iron, sulphur, et cetera, and perhaps vitamin deficiencies, are often followed by endemic goiter; that when the incidence of endemic goiter is high that such deficiencies in the food and water supply will be found to be present.

Second, many of us are thoroughly convinced that systemic and local infections are often followed by goiter.

Third, when endemic or simple colloid goiter and chemical or vitamin deficiencies are present, any systemic or focal infection is likely to activate the goiter and one of the severe forms of goiter result.

Therefore, prevention, in the main, would seem to call for careful attention to general and focal infections and to the adequate supply of iodine, calcium, phosphorus, iron, sulphur, vitamins, et cetera, in the food and water supply.

According to many eminent men in our profession, a deficiency of iodine is one if not the sole cause of endemic or simple goiter. There has been a steadily increasing interest on the

part of public health authorities, physicians and the laity in what has been called the iodine treatment of goiter. Much publicity has been given it. The public have been led to believe that iodine is the treatment par excellence for goiter. But it is not generally clearly understood that *only prophylaxis* is contemplated, treatment being an entirely distinct subject, which had best be intrusted to the practicing physician. While iodine holds a definite place in thyroid therapy, its administration requires study and observation of individual patients as well as caution in application of the remedy, lest untoward results or permanent damage be inflicted. The public should be made to understand that iodine supplied to correct iodine deficiency is a *nutritional procedure* and not medical treatment at all. Calcium deficiency, phosphorus deficiency, iron deficiency, et cetera, are often followed by thyroid disturbances. Adequate amounts in the food and water supply of calcium, phosphorus, iron, vitamins, iodine and many other things are necessary for perfect nutritional balance.

No conclusive evidence has ever been presented that pathological changes in the thyroid gland can be influenced in any way by medical treatment. The symptoms can be altered by symptomatic treatment. The condition of the patient may be improved by correction of nutritional deficiencies, control of infections and by the proper correction of dysfunction in other organs. In Basedow's disease there is rapid metabolism and usually defective assimilation. Deficiency of calcium, phosphorus, potassium, sulphur, iron and iodine rapidly develop. As iodine is assimilated more rapidly than any of the other basic constituents, such as calcium, phosphorus, et cetera, and is perhaps more important to metabolism, correction of the iodine deficiency by administration of any preparation of iodine is followed by prompt symptomatic improvement in the condition of the patient. But when enough iodine has been assimilated to *correct the iodine deficiency, no further benefit can be obtained by its administration.*

A definite enlargement of the thyroid at puberty is of rather common occurrence. It is doubtless true that there is normally some enlargement of the thyroid at puberty. But the majority of definite enlargements of the thyroid at puberty are either endemic goiters or else are due to some local cause, such as a fetal

adenoma, hemorrhage, new growths or infection. A fetal adenoma usually manifests itself at about the age of puberty by a large smooth increase in the size of the lobe in which it is situated. Unilateral enlargement at the age of puberty is usually due to this cause. This type of goiter, unless it becomes toxic and the clinical picture of toxic adenoma presents itself, requires no treatment until after the diffuse enlargement has subsided and the adenoma or other tumor is palpable, when it should be removed.

In the early stages of true endemic goiter, correction of all nutritional deficiencies, vitamin as well as chemical (especially iodine), control of existing infections and the administration of thyroid extracts are indicated.

Simple, mild goiter may be present for many years with apparently no other discoverable symptoms than the enlargement of the neck. The majority of them, however, finally become active or toxic. We have come to the belief that nearly all of them are activated by strumitis from some systemic infection like flu, scarlet fever or diphtheria, or from some focal infection, teeth, tonsils, et cetera.

Every patient having influenza, measles, scarlet fever, diphtheria, et cetera, should be watched for signs of strumitis or thyroiditis for weeks and usually months afterwards. Every year we are able to *definitely* trace a larger percentage of our cases of goiter or diseases of the thyroid gland to some systemic or focal infection. The enlargement of the thyroid usually begins within a few weeks after the time of infection. But it is often some time before the enlargement attains sufficient size to seriously impress the patient. This late development of obvious evidence of the presence of thyroid disturbance is the reason that infection as an etiological factor has not received the attention that it deserves.

Tuberculous patients should always be carefully watched for evidence of goiter, both hypothyroidism and hyperthyroidism. A tuberculous patient with a rather small vertical heart and a long narrow aorta shadow should always be *suspected* of having hypothyroidism. The symptoms and toxic effects of tuberculosis and goiter are so nearly alike and they are so often present together that the thyroid disturbance may be overlooked. If the patient can carry both loads, the removal of one will be attended by almost spectacular improvement. Every tubercular patient

whose pulse rate is higher than is consistent with his temperature curve should be suspected of having an active goiter.

Recognition of hypothyroidism is of almost as much importance as the recognition of hyperthyroidism. It changes the emotional states and reduces the efficiency and happiness of those afflicted. It is easier overlooked than hyperthyroidism. Attention is often called to hypothyroidism by the characteristic heart shadow. The fluoroscopic shadow of the heart of the hypothyroid patient usually shows a narrow aorta and a small vertical heart. The shadow of the heart of the patient with hyperthyroidism is usually larger and more transverse with increase in the size of the shadow of the aorta.

As a dependable measure for cure of all kinds of well developed goiters, especially when toxic, we must rely upon operative interference. The improvement in technique has made goiter operation almost a minor operation if done before complications have occurred. There is no other operation performed today in which the results are so uniformly satisfactory as the operation for goiter. But the important thing is prevention. Every patient who is operated upon is necessarily left sub-normal in some way. While hundreds of lives are saved by surgical, medical or x-ray treatment, yet there are thousands of others in our own state who are suffering from the effects of goiter.

CONCLUSIONS

The correction of nutritional deficiencies and control of infections are the basis of prevention and are in large part the medical treatment of goiter. The public should be made to thoroughly understand that the supplying of iodine for the correction of iodine insufficiency is a nutritional procedure and is not medical treatment.

There is great need for standard nomenclature and definite standardization of treatment.

Notwithstanding the great value of nutritional and medical treatment, yet the main reliance in well developed goiter must be in the surgical treatment.

A wide survey of our entire country by each County Society as to prevalence and the result of treatment is the only way that adequate information in regard to goiter can be obtained.

The two great causes of goiter are nutritional deficiencies and infections. Every advanced or well developed goiter or toxic goiter means that

nutritional deficiencies or some infection or both have been present and were not promptly controlled.

PERSONAL OBSERVATIONS OF DIABETES MELLITUS SINCE THE ADVENT OF INSULIN*

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The observations upon which this paper is based date back as far as November 1, 1922, at which time I began the use of insulin (Lilly). From that date to the present time 186 cases of diabetes mellitus have come under treatment. Two cases of so-called renal diabetes presented themselves for insulin treatment because they were unable to become sugar free under strict diet. The number of cases treated fell into age decades as follows: In the first decade of life were 7; in the second, 11; in the third, 12; in the fourth, 10; in the fifth, 26; in the sixth, 43; in the seventh, 59; in the eighth, 15; and in the ninth, one. Of the 186 cases treated 121 were given insulin. All except the very mildest were hospitalized for an average period of two weeks. During their stay in the hospital they were given a course of instruction in diabetes. If the patient was too young or too old, or lacked sufficient education or time to carry on subsequent treatment, some other member of the family was given the training.

The course of instruction consisted of:

1. A study of Joslin's "Diabetic Manual," including explanations of anything therein not fully understood.
2. Daily instruction by the dietitian in:
 - A. Making out diet lists figuring menus exactly as to requirement of carbohydrates, proteins and fats.
 - B. Weighing of foods.
 - C. Preparing special foods, such as breads.
3. Instruction in clinical laboratory as to examination of urine for sugar and diacetic acid.
4. Instruction by physician and nurse:
 - A. In the preparation of the syringe and in the hypodermic administration of insulin.

*Read before Medical Section American Life Convention at Louisville, Ky., June 2-4, 1925.

B. In the hypoglycemic reaction and its treatment.

The response to such a course of instruction was good. The majority of patients were eager to learn. In a few cases patients were too ignorant to acquire any proficiency; in a few others, too old and without relatives to assist them.

Questionnaires recently were sent out to all cases and 123, or two-thirds of the total number of cases observed, were heard from. It is interesting to note just how many, and to what extent, patients were benefited by their two weeks course of instruction in the hospital. Seventy cases were still using insulin; 30 were actually weighing their food; 25 were merely estimating roughly the amount of food taken; 14 were neither weighing nor estimating it; while 6 reported discontinuance of insulin without reappearance of sugar, all 6 of which were over weight and past 40 years of age.

There were 27 deaths, only 5 of which were from coma. Case No. 10, aged 17, discontinued insulin at the suggestion of his local osteopath, who promised him a generous diet and a cure by manipulation. He died at the end of two weeks, no more insulin being used. This boy was below average in mentality, worked on a farm, and had no sympathetic co-operation from a step-mother, being practically forced to weigh and cook his own food.

Case No. 18, aged 16, a county case, son of a poor woodchopper living along the river, ran out of insulin and died in coma without a physician.

Case No. 24, aged 28, a headstrong young woman, persisted in eating sweets and gave up use of insulin, coma and death resulting.

Case No. 32, aged 24, after carefully weighing her food and taking insulin for six months, became discouraged, as reported by her husband, gave up diet and insulin, and died two months later.

Case No. 40, aged 12, an unmanageable child, no co-operation from parents, ate an enormous amount of ripe cherries and died within 24 hours, no insulin being used.

The other deaths were divided among cardiac, vascular, renal, and septic causes, occurring in patients past 50 years of age. One case, aged 25, died of tuberculous peritonitis, and one, aged 8, of a supposed acute pancreatitis. Two cases of thrombophlebitis returned to the hospital with high temperatures and very strong clinical pic-

tures of sepsis. The fatal course of these two cases was uninfluenced by insulin.

The value of insulin was shown in many ways. During hospitalization and subsequent course of cases it was repeatedly demonstrated that it gave specific relief from such distressing symptoms of diabetes, as thirst, polyuria, and weakness. Neuritis, arthritis, and furunculosis were controlled unless other factors were concerned. The use of it was specific for early coma. One case of pregnancy, primipara, aged 24, with true diabetes, was piloted safely through labor and puerperium without decrease of tolerance. The baby was puny and lived only two days. Surgical disease was rendered more safe for operation. Economic salvage was remarkable. Invalids became again useful citizens. Case No. 12, aged 32, height 5 feet 10 inches, weight 92 pounds, is illustrative. He was married, had two children, a renter, unable to work on account of weakness, emaciation extreme, thirst and polyuria troublesome, and practically bedridden—a diabetic since 1918. It was necessary for him to reduce his diet to 800 calories to keep sugar free. Patient left the hospital after 18 days treatment, taking 2,000 calories and 10 units of insulin three times a day. His questionnaire, received after a lapse of two years, shows a gain in weight of 30 pounds. He states, "My general health is good; I have been out every day this winter; have had no colds of any kind; am feeling good; am doing general farm work of all kinds, and can eat enough to hold my weight and do my work." The case which did not return to his former occupation was an exception, there being only three cases in this series.

This economic salvage is of great importance to insurance companies. Many of our policy holders will develop diabetes. Yearly examinations of urine will give us this necessary information. Overweights especially should be advised to send in specimens. Early detection of sugar means longer life. May it not then be advisable for insurance companies to see that diabetic policyholders are instructed properly in the care of their diabetes?

Children were easy to teach, but we found that the long continued strict regime often created in them rebellion; they frequently became hard to manage and often were found to steal and lie as adroitly as a morphin addict. One, a little girl, aged 8, was so successful in eluding the nurses

that she was able to get her fingers frequently into a can of glucose which was kept in a bath room for proctoclysis. Another, a boy, spent all the nickles he could get for candy. Still another built himself a shack and had the other boys donate the food. A padlock on the home kitchen is often necessary.

Our first case, a lad of 10 years, is a good example of just how well children get along when their parents are intelligent and bend every effort to watch details. Having lost a beautiful young daughter with diabetes just prior to the advent of insulin, taught them the importance of strict care. This boy, in November, 1922, weighed 60 pounds, height, four feet five and one-half inches. He now weighs 82 pounds, height, four feet nine inches. He is a picture of health, attends school, plays ball, and belongs to the Boy Scouts. He has been given over 2,000 hypodermics of insulin without infection by his father. During his stay in the hospital he had a severe insulin reaction. Through error he had been given a rather large dose of insulin and there was delay in serving his tray. He was found in coma unable to swallow, sweating profusely with weak, thready pulse. A stomach tube was immediately introduced and glucose given thereby. In five minutes he began to rouse himself and was soon perfectly conscious and asking for food. Hypoglycemia, as a rule, gives little trouble and is easily controlled. Patients soon learn to know a reaction and its method of relief.

It was distinctly noted that all diabetics below 40 years of age, and more especially below 30, live within a very close margin of safety. They are subject at times almost to kaleidoscopic changes in tolerance, and coma is ever around the corner. They must be kept well balanced with diet and insulin at all times. The two following cases illustrate this fact.

Case No. 28, aged 25, a trained nurse, went into severe coma and recovered with insulin. She then took up institutional work and was relieved of the necessity of preparing her diet, although she took her own insulin. As head nurse in charge of a floor, she was on duty daily. She went home on a short vacation, estimated her food instead of weighing it, and returned to the hospital with a severe degree of acidosis.

Case No. 92, aged 23, a farmer's daughter, with a severe case existing since March, 1922, came under observation in January, 1923. at which

time her weight was 87 pounds. She was in the hospital four weeks, returned home and did well for a year. At this time she showed sugar, was unable easily to control it and became a little careless, not reporting her difficulty. She suddenly went into coma and was saved only by the vigorous use of insulin. She returned to the hospital and since leaving has lived a most careful life, making daily records of her diet and condition. She has had numerous hypoglycemic reactions and temporary disturbances of tolerance, but has learned how to juggle her diet and insulin dosage until she is an expert. I have her original record sheets as mailed to me during the past year, and wish to submit them to you as a perfect example of an educated insulin patient—Dr. Joslin would call her a "Spartan."

In contrast to these two cases is No. 101, aged 59 years. He stated in his questionnaire that he does not weigh nor estimate his food. His weight is 220 pounds. He takes 5 units of insulin twice a day, does not test his urine, feels fine, and works every day. He does not need insulin but prefers to use it and satisfy the flesh. He is a typical "Sybarite," but it is doubtful whether or not he will have will power enough later on in life to meet the lowered tolerance which is destined to result from his food intemperance.

Human nature tires of dietetic restrictions. Many patients do not have the fortitude to climb on the wagon and stay there. Case No. 39, age 63, came to the hospital on a stretcher. His weight was 135 pounds, blood sugar 340 mg. per 100 c. c. There was a marked acidosis present. He now weighs 160 pounds and has resumed his occupation as a drug salesman. He does not test his urine, takes 10 units of insulin three times a day, and enjoys general good health. Under remarks, he states, "Present dosage of insulin permits me to eat what I desire. I feel good, and as long as insulin keeps me where I am, I do not care to test my urine and keep my mind upside down."

Case No. 120, aged 52, typifies the careless attitude of the patient who feels well. He reports, rough estimation of food, no examination of urine for six months, perfect health, and ability to drive his car 2,000 miles a month. He states he hardly thinks his report will meet with my approval since he has lost the scientific attitude. He closes with the following remark. "In-

sulin has relieved me of the drudgery of diabetes."

No case of any severity below the age of 40 has been able to discontinue the use of insulin without a return of symptoms. Case No. 21, a boy, aged 13, came under observation just two months after he developed diabetes. He was on insulin for six months, at which time his home physician gradually discontinued the use of it. He remained sugar free for one and a half years on a fairly liberal diet. After an attack of influenza sugar reappeared, and it now takes a strict diet with 15 units of insulin three times a day to control it.

An interesting observation in some cases was the change in threshold blood sugars. Case No. 54 always gave a normal fasting blood sugar; but now his fasting blood sugar is often 200 mg., without sugar in the urine. It was necessary to raise his insulin dosage in order to correct same.

A true case of diabetes was discovered in a nephritic, aged 65. This case had never shown sugar in the urine, although albumin and casts had been found. One day she became very drowsy and it was feared a uremia was impending. The urine contained large amounts of diacetic acid and acetone, without sugar. The blood sugar at this time was 300 mg. per 100 c. c. Insulin was given with immediate relief. The patient was placed upon a regular diabetic regime, but in order to meet her caloric requirements, it was necessary to give her 12 units of insulin daily to keep her blood sugar normal. This patient feels perfectly well as long as her blood sugar remains within normal limits, but dietetic indiscretions soon disturb her.

Some nephritics are known to have high blood sugars without sugar in the urine. It is my belief that these cases are true diabetics and should be treated as such. The uncomplicated nephritic shows a normal blood sugar. I believe that arterio-sclerotic kidney cases, who give occasional sugar reactions in the urine, have also arterio-sclerotic changes in the pancreas. The kidney cases that show an occasional sugar reaction with hyperglycemia feel much better on a restricted diet.

The possibility of error in technique introduces a real danger in the interpretation of blood sugars. Fresh blood and competent workers are essential to reliable results in blood sugar estimations. Insurance companies relying upon

blood sugar evidence must have unquestionable assurance of the competency of the test.

We, as an insurance company, were recently asked to pass upon an applicant who had been given 100 mg. of glucose, and whose blood sugar four hours after the ingestion of that amount was reported to be 400 mg. per 100 c. c., with no sugar in the urine, no albumin, nor casts and a normal blood pressure. The blood sugar test had been made by some physician unknown to us. It is well to remember that the fasting blood sugar is normally 100 mg., that it should not go above 150 mg. after a meal or glucose test, and that it should return to normal within two hours.

The threshold point of glycosuria in diabetes shows wide variations, being the highest where nephritis co-exists. Roe and Irish have recently reported 100 cases with a range from 80 to 310 mg. The highest threshold in my series was 210 mg. in a case without demonstrable kidney change, and 300 mg. in a case with nephritis.

Medical directors are aware of the fact that fraud can be perpetrated upon the company since the advent of insulin. This fraud, however, could be practiced before the discovery of insulin by strict diet or starvation. Nevertheless, it requires a period of observation by a physician, together with weighed diet and blood sugar estimations, to make the deception complete. We recently had an applicant for insurance who had had three reports for sugar in different years. He insisted upon coming to the home office for tests. We gave him 100 mg. of glucose and found he showed a normal blood sugar curve with negative urines. His conversation so betrayed the fact that he was very well versed in the subject of diabetes that a suspicion was aroused and his impairment record was considered of more importance than the glucose test.

A point which may be of some assistance in determining whether or not a case has been using insulin is the presence of raised boggy areas on the outer aspects of the arms or thighs, or visible stick wounds, or an occasional area of redness. True infection is rare.

CONCLUSIONS

1. Insulin has been responsible for a wide dissemination of knowledge concerning diabetes by hundreds of hospitals, clinics and physicians.
2. The importance of diet in diabetes has resulted in thousands of diabetics and physicians

becoming better versed today than ever before in the subject of calories, carbohydrates, proteins, fats and tolerance.

3. The future of the diabetic depends upon his reliability, intelligence, and perseverance in carrying out his treatment.

4. Insulin gives specific relief from all diabetic symptoms, but does not cure.

5. Economic salvage in well treated cases is remarkable.

6. Diabetics under the age of 40 have a harder battle to fight than those above, and live within a closer margin of safety.

7. Blood sugars, properly made, are of great value in diagnosis and treatment.

8. Insulin increases the longevity of the diabetic as shown by fewer deaths occurring in children, and by the postponement of death in the adult.

9. Intensive instruction and treatment given to cardio-vascular cases, to the extent that it is given the diabetic, would greatly improve our mortality savings.

Peoria Life Building.

THE SURGICAL TREATMENT OF PULMONARY SUPPURATION*

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The subject of my paper today, namely "The Surgical Treatment of Pulmonary Suppuration," was chosen because in the last few years, special progress has been made in the care of these conditions. Formerly a patient afflicted with chronic pulmonary suppuration who did not respond to medical treatment was doomed to a life of invalidism. Even if physically in good condition, the sickening offensive odor of the sputum made him a social outcast.

For a long time, operations have been known for the treatment of lung abscess and bronchiectasis. These operations, however, have been so dangerous that their use was greatly restricted. Within the last few years, improvements in the methods of operation have safeguarded the procedure so that now the risk is greatly diminished. Surgery at present is able to offer a large number of these suffering invalids a definite hope

of relief of symptoms; a definite hope that they may be returned to their former economic and social status.

The same steps must occur in the healing of an abscess of the lung as in the healing of abscess elsewhere. Firstly, there must be evacuation of the pus and secondly, obliteration of the cavity. Not until adequate drainage has been established and the cavity obliterated can cure occur. In a large number of cases nature does this herself. Spontaneous rupture into a bronchus takes care of the drainage and subsequent collapse of the cavity and ingrowth of granulation tissue result in the final abatement of the pathological process. Because of this, surgical intervention is not indicated unless it has become evident that medical treatment is of no avail. The continuation of such symptoms as chills, fever, cachexia, intoxication indicate clearly inadequate drainage and the absorption of toxic material; and the persistent sputum proves the presence of unobliterated spaces.

Surgery must attempt to treat the condition by the same methods which cause spontaneous recovery, namely, free drainage of the products of suppuration and collapse of the infected cavity. Surgery in the past has failed because in the first place these underlying principles were not clearly recognized and in the second place, the attempt to carry them out involved dangers which seemingly could not be overcome. The incision through the chest wall into the abscess cavity in order to establish drainage is apt to be followed by two very serious consequences; first, the production of an open pneumothorax and second, the development of an empyema. Either condition is serious. In a case of chronic pulmonary suppuration the pneumothorax is of course less to be feared than in acute conditions. As a rule the collapse of the lung is not complete because of the presence of pleural adhesions. However, the production of an open pneumothorax greatly prolongs the course of the disease and in the entire absence of pleural adhesions may be extremely dangerous. Empyema invariably occurs if the lung abscess is drained through a patent pleural space. Because of the condition of pneumothorax the resistance of the pleura is especially weak and the infection is apt to be extremely malignant. Those cases that do not succumb must face the long and often stormy course common to chronic empyema. If firm adhesions

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have been developed between the visceral and parietal pleura and have obliterated the pleural space pneumothorax and empyema will not occur.

Another reason for the inadequacy of former operations was that an incision into the main abscess cavity frequently did not establish the desired drainage, because numerous partitions of the cavity itself, neighboring cavities, bronchiectatic spaces, remained unopened.

Failure to realize that the rigid walls of cavities interfere with the obliteration of the spaces and that radical plastic procedures must be instituted has in many instances accounted for the persistence of the pathological conditions.

The success of present day procedures is due to the fact that methods have been evolved whereby drainage can be established safely and adequately and a collapse or obliteration of suppurative tissue obtained by means of plastic reconstruction.

For the sake of completeness, before elaborating on what in my opinion is the most satisfactory operation, I will mention three other surgical procedures which have been used in the attack on pulmonary suppuration.

The first is bronchoscopic irrigation. The New York school especially claim very good results in the suppurative diseases of the lung by facilitating bronchial drainage by means of irrigation and suction carried out through a bronchoscope.

The second is the establishment of an artificial pneumothorax. The rationale of this procedure is that as the lung is collapsed the cavity also collapses, drainage is hastened and eventually obliteration of the cavity brought about. There is no doubt, moreover, that putting the lung at rest is beneficial to the condition. If the abscess is situated deep in the lung near the hilus this method is safe and rational. If the abscess is near the periphery the collapse may be not without danger. The presence of pleural adhesions prevents the lung from collapsing and thus nullifies any good that may be expected from the procedure.

The third is extra pleural thoracoplasty. Following the teachings of Sauerbruch attempt has been made to collapse the cavity in those cases in which artificial pneumothorax is of no avail, by collapsing the chest wall. This operation has at present many enthusiastic followers. Paravertebral sections of the ribs covering the suppurative

lung tissues are removed subperiosteally. The chest wall is allowed to sink in and the lung is thus firmly compressed. At present it may be a little early to evaluate the true benefits to be derived from this operation. However, in the case of multiple lung abscess and bronchiectasis the fact that adequate drainage is not established and the suppurative tissues is not removed are definite drawbacks to this method. The operation is a major procedure, deforming, and should not be undertaken too lightly.

The improvements in the technique of radical attack on lung abscess are the following:

1. The artificial production of pleural adhesions.
2. The establishment of adequate drainage and the removal of infected lung tissue.
3. Plastic obliteration of the cavity or remaining spaces.

Artificial production of pleural adhesions is brought about as follows: After the requisite number of ribs have been excised over the suppurative area, preferably under local anesthesia, the peripheral pleura is exposed and carefully studied. If no adhesions are present the underlying visceral pleura and lung will be clearly seen moving with each phase of respiration. In case the surgeon should be in doubt after the study of the open pleura the presence or absence of a patent pleural space will be revealed beyond any peradventure of a doubt by making a small incision through the visceral pleura and seeing whether or not air is sucked in. If the pleural space is patent the surgeon has the choice of several methods for the artificial production of the adhesions.

A large iodoform gauze pack may be inserted into the wound and held firmly pressed against the entire exposed area of parietal pleura by means of bandage or suturing the skin. The presence of this pack irritates the parietal pleura sufficiently to stimulate the formation of firm adhesions. Another method consists in actually stitching the visceral pleura to the parietal pleura. This can be done by means of large, curved needles without opening the parietal pleura. A third method consists in incising the parietal pleura and actually packing the pleural space taking care to let as little air as possible enter around the packing. In ten days or two weeks the pack is removed. It will be found now that the pleural space at the site of the future

drainage has been obliterated. The abscess cavity can therefore be opened without fear of a pneumothorax or an empyema.

The second stage of the operation consists in the establishment of drainage and the removal of infected lung tissue. The abscess cavity is reached by means of a scalpel or cautery or blunt dissector. The cavity is widely opened, partitions are broken down and other cavities or bronchiectatic spaces laid bare by means of the cautery. All this need not be carried out at one time but can be done little by little over a period of several days. Except for the pleura no further anesthetic is necessary as the lung is insensitive to pain. Hemorrhage, primary or secondary, may be severe but because of the low blood pressure in the pulmonary circulation bleeding can be very easily controlled by packing. Drainage should be maintained for a long time. It is far better to drain too long than not long enough. The presence of bronchial fistulae is of less consequence than was formerly supposed. The majority heal spontaneously after adequate drainage has been established. Those that do not heal can be dealt with by a variety of methods, and if the fistulae persist, the establishment of the permanent "lung-lip fistula" of Willie Meyer can be carried out by the formation of an epithelial lined track leading to the fistula.

Plastic procedures to obliterate the abscess cavity are numerous and vary so markedly with each individual case that no definite technique can be outlined. Collapse of the adjacent chest wall, the sliding skin graft, pedicle flap transplant, may all be used to accomplish the obliteration. The obliteration of an abscess cavity offers virtually the same problems as the obliteration of an empyema cavity and most of the methods which have been used for the latter are applicable to the former. In most cases obliteration of the cavity means complete opening, and marsupialization of the cavity.

I have gone into the methods of operation of lung abscess at some length because these methods are applicable not only to abscess but to other suppurative conditions of the lung as well, provided only that the suppuration is confined to a limited area.

Bronchiectasis is a condition which is generally supposed to be beyond the help of surgery because of the fact that the innumerable number of infected spaces cannot readily be drained.

Medicine in these cases offers but little. Hygiene, postural drainage, arsenic, help in the sense that the general physical condition of the patient is better preserved and that the symptoms are less obnoxious. But the constant fetor oris, and the slow decline or frequent flare up of acute symptoms, so interfere with the usual routine of daily life that as a rule the patient is a chronic invalid. With the improvements in the technique of x-raying the chest, it has been discovered that bronchiectasis is frequently definitely circumscribed and limited to a comparatively small area of lung tissue. Although the condition is usually bilateral, both lower lungs being affected, frequently the pathological changes are confined almost entirely to one side. Occasionally the condition seems to be limited to one lobe only. Where the disease is entirely or chiefly limited to a single lobe, the removal of that lobe will give relief of symptoms. The operation of lobectomy as formerly practiced was extremely difficult and extremely dangerous. Everett Graham first demonstrated clinically that the diseased lung tissue can be easily and safely removed by means of actual cautery. This operation of cautery lobectomy has revolutionized the treatment of bronchiectasis. The technique of operation of cautery lobectomy is the same as that which I have described. Pleural adhesions are produced and then bit by bit the affected lung is removed with the cautery. The repeated cauterizations can be carried out or at the bedside of the ward without anesthesia, without shock. Thus the entire infected portion of the lung can be removed leaving behind a walled off cavity which may either be allowed to granulate and epithelize spontaneously or which can be closed or reduced in size by plastic procedures. The results of this operation are gratifying, the technique is simple, the operative risk comparatively slight.

CONCLUSION

The profession has as yet not generally accepted the fact that a large group of pulmonary suppurations not relieved by medical treatment are amenable to surgery, nor that the surgical treatment carried out in the rational manner at our disposal is no longer fraught with great danger.

Because of the relief which now can be offered to a group of otherwise hopeless cases, I feel that too much emphasis cannot be laid upon the

principles which have brought this about, and therefore I have the temerity, even at the risk of repetition, to present these brief notes to you.

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PUBLIC HEALTH AND THE MEDICAL PROFESSION*

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The subject assigned me is a rather large one to adequately cover in the time allotted on the program, but, as the writer was only requested to prepare this paper a few days ago, he will not burden you with a long treatise on the subject, but merely try to emphasize a few of the most outstanding points. Much has been said in recent years about what belonged in the field of public health activities and what to the practice of curative medicine, and there are those who would have us believe that either branch of the profession is encroaching upon the other, whereas there is really no conflict between the practice of medicine and the prevention of disease when the facts in the case are rightly understood.

Public health in its broadest meaning has to do with all that concerns the health of the public. That would include the cure of disease as well as the prevention of it. It would also include the things we eat and wear, the homes in which we live, in fact under such a broad definition every activity of whatever nature would be included. If a health officer undertook to carry out such a large task, his life would be a source of continual worry to him, and he would do nothing well. Consequently it has been necessary for health departments to select those activities which offer the greatest return in the matter of preventing disease, preserving health, prolonging life and making the world a better, a healthier and a happier place in which to live. Some of these are; protection of the public water supply; sanitary disposal of sewage; food, meat and milk inspections; nuisance control; the quarantine and control of communicable diseases; laboratory service; the prevention of tuberculosis, typhoid, malaria, the intestinal diseases and the venereal diseases; medical inspection of schools; public health nursing; child and maternity hygiene; dental hygiene; mental hygiene; the collection of vital and morbidity statistics; industrial hy-

giene; life extension work; public health education, etc. A health department that carries out these activities well is performing its function and doing all that can be reasonably expected of it. Yet there are those who would turn it into a scavenger or garbage collection service, or perhaps an agency for inspecting and mending broken water or sewer pipes, or any of the numerous things remotely related to public health. It is much more important to try and save the lives or prevent the suffering of the men, women and children than to be devoting most of the time to cleaning up trash and waste paper or destroying bad odors and cutting weeds, which seem to be the things of paramount importance in the minds of some people.

We frequently hear the term preventive medicine used, and many are inclined to interpret it to mean that the public health agencies of the country are doing their best to prevent the physicians earning a living, in other words driving them out of business. It is a poor term, and nothing is further from the truth. The health officials and the practicing physicians are doing the same thing, only in a different way. Both are doing their best to save life and prevent suffering and no physician with a conscience desires to see his patients suffer or die in order that he may have a full pocket book. The true type of physician, and I am glad to say most of them fall in this class, would rather see his patients remain well than become ill. The true mission of a physician is not merely a dispenser of pills, powders and liquid medicines, but rather an health advisor to keep his patients well if possible, and when they become sick to do all in his power to restore them to health as speedily as possible. It is his function to treat the sick individual. It is the function of the health department to treat the sick community and keep it well.

There is much however, the physician can do to aid the health officer in his work. The prompt reporting of all cases, or suspected cases of communicable diseases would be a great help in controlling epidemics and saving many lives. The accurate and prompt recording of all births and deaths by the men in practice would also be a great aid to the health officer in his work. Advising patients suffering from communicable disease of the importance of remaining in quarantine, using proper measures to sterilize the secre-

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tions and excretions of their bodies and observe the health laws would be the means of avoiding many misunderstandings and greatly aid in protecting the public against disease. The physician can also be of untold benefit to the health department by creating a high regard for such work in the minds of his patients and never criticising the work (no matter how just the criticism is) in the presence of a patient, but reserving his feelings and controlling his temper until he can "have it out" privately with the health officer himself. All true health officers would appreciate this attitude, would be willing to admit their mistakes when they occur and do their best to correct them. *Destructive criticism*, especially to the public, "gets one nowhere," but it must be a "bone-head" indeed who would not appreciate *constructive criticism* at all times.

Likewise, the health officials can, and should, cooperate with the physicians in many ways. They should urge the public to go to them regularly, at least once a year, for a careful, complete physical examination to see what their stock of health is. If this work is sufficiently popularized, it will place the physicians in a better relation with their clientele than ever before, but as the people become educated to see the importance of periodic health examinations, the physicians must train themselves to make better physical examinations so as to be able to make a diagnosis earlier in the course of a disease. Such a plan worked out successfully would be one of the greatest public health measures yet devised. It would be of untold value to those examined and would much more than offset any decrease in income to the physicians from the successful performance of other public health measures which some seem so to fear. The health officer can also give to the physicians a free consultation and diagnostic service in the case of communicable diseases and relieve him of the responsibility for the diagnosis, thus making his relations with the family more pleasant. The health officer can relieve the physician of many embarrassments along this line. The health department should also provide free laboratory service to the physicians for all public health specimens. Last, but not least, the health officer should uphold the hands of the physician in the community, strengthen his position with the public and never do anything to injure in any way his good reputation or affect his standing with

his patients. When physicians and health officials cooperate in the manner outlined, there can only be one result, namely: harmony, success and mutual good will.

Some would tell us that public health is invading the field of curative medicine because methods of treatment are sometimes resorted to in order to carry out certain measures. One must admit that the dividing line between curative medicine and public health is very uncertain in some cases, as for instance in the administration of sera and vaccines, etc., for the prevention of communicable diseases, the use of iodine treatments in the prevention of goiter and the organization and conduct of certain clinics, etc. In all these doubtful matters the determining factor should always be the welfare of the public rather than the individual. The protection of the life and health of the public comes first. If the physicians of a community can protect more persons against smallpox, for instance, than would be the case if the health department undertook a wholesale campaign of vaccination, then the logical thing would be to turn the whole work over to the physicians; otherwise, the health department should join in on it. It has been recognized in many places that more persons can be protected against disease where these measures are instituted by a well organized health department because it has better facilities for publicity and advertising than would be the case with the individual physicians. The health department undertaking such measures, however, should not interfere with the individual physician doing the same thing for those who desire his services. But the question is frequently raised that when the health department does this work, it deprives the physician of a part of his legitimate income. Perhaps this is true in the beginning to a certain extent, but it must be remembered that if the people would go to the physicians in sufficient numbers to get the protection desired, there would be no need for the health department to do it for them, and the health officers would be delighted to have that much less to do. But as the public do not as a rule seek protection from disease, it is frequently necessary to popularize a method to "put it across," and the health department is in the best position to do this. After it is once popularized, then the people are more inclined to go to their own family physicians for the service, and the

health department can devote most of its energies elsewhere. However, there will always be a class of people who cannot, or will not, pay for such service for themselves or their families, and if they are to receive the benefit, the health department must furnish it to them. The better class of people who can pay will turn to their physicians for the service and instead of the health department depriving the physician of a part of his legitimate income, it has increased it by inducing people to go to him for a service which they did not see the importance of before it was popularized by the health department.

A physician who would advertise his business would be considered unethical, and justly so. Yet a health department must do this in order to "sell" public health to the people. It frequently takes every known art of the professional advertiser or publicity man for the health department to "sell" a certain measure to the public for their own good, and even then it often fails. Literature is distributed and articles written often in a spectacular or sensational manner (but they should always tell the truth for nothing will do more damage than a lie). The public like something startling or sensational. These methods are perfectly legitimate for the health worker, considering the end result, for by this means the health of the public may be protected when otherwise it would not be.

In light of what has been said there seems to be no legitimate reason for physicians and health officers to disagree, for both desire to do what is best for the welfare of the public, and neither desires to encroach upon the work of the other but rather to assist each other. If there is a difference of opinion and they cannot agree at the time, it would be much better to undertake only those things upon which they can agree until a satisfactory arrangement can be made to do the thing about which there is some question. Physicians and health officers received the same training to begin with, their aims are the same, they belong to the same "brood," so why not work in harmony together?

DISCUSSION (ABSTRACT)

Dr. W. C. Blaine, Tuscola, Ill., stated that he was one of the first to recommend health service in this line in Illinois, and wrote one of the first papers, in 1906-1908 under the title of "Obligation of the State to the Growing Child," advocating the full time county health physician and nurses. And he still insists upon

that, as a general practitioner rather than as a health man. Physicians are not cooperating with health men as they should, and they frequently put forth the argument that they would be depriving themselves of their income. That is folly, when people are walking the streets needing medical attention today, and he thinks any physician who has this attitude should have his license taken away from him.

Dr. S. E. Munson, Springfield, Ill., thought Dr. Keister had a very good field in Decatur, and a fine class of physicians there to cooperate with him. The difficulty in Springfield with public health work is usually because the physicians do not understand the procedure of the public health work and the public health officers. The public health officer is often new in his work, and fails to cooperate with the physicians, because he has not first placed himself in touch with them and asked their cooperation, which is generally forthcoming if they are approached in the proper way. The day has gone by when the health officer is not well acquainted with his duties. He predicts that the health officer in Springfield is going to be very successful in securing the cooperation of physicians. He goes to society meetings, he tells the men what he wants to do, he asks for suggestions, and he presents these at the medical societies, and the men are ready to assist him. The child welfare movement in Springfield was started by women who did not realize the importance of having physicians interested. They had nurses in control of their work who had studied the work in pediatric clinics. One of the nurses went about and visited babies, and in some cases the mother had scarcely got home from the hospital before the child welfare nurse was at the door. This became obnoxious to the physician who was in charge of the case, and led to considerable dissension. There was one case in which it was said the nurse told the mother that the physician in charge of the case really knew very little about the care of babies, and mentioned the name of another doctor who had charge of the welfare station—said he knew about the care and feeding of babies. Pretty soon there was a war on in the society. Finally by getting three members of the society on the board, harmony was restored. And these women were usually women of mature years of the type with which we are all familiar—particularly women who had never raised babies in their own families. The fact is that child welfare work originated among physicians, and we should be the men who control it.

Dr. J. P. Simpson, Palmer, Ill.: Admitted that in his early days he was occasionally much annoyed by the "grannies," but now he appreciates them more, having done much to educate them.

He thinks the great need, in the case of infectious diseases, is an umpire. When there is any doubt as to the diagnosis of diphtheria, scarlet fever, etc., the community should be given the benefit of the doubt and the family quarantined. Two physicians may disagree on the diagnosis, and both be mistaken. In such case there is need for the community health officer to

pronounce the official kibosh. Otherwise the community will take sides in the controversy, hence the need for an umpire just as at a ball game.

"Some years ago there was a school marm, who returned from her Christmas vacation with a sore throat. She was ill enough that she asked me to make a long drive in the night to see her. I pronounced it diphtheria. She became greatly incensed, and before I could secure the antitoxine and return she tried several physicians and was finally able to find one who would visit her.

"The first one tried, a good sort of scout, refused to go when he learned what was up. (We elected him president of our Society later.) The other fellow was obliging enough to take the case and change the diagnosis. Our only umpire at that time was at Springfield. It may be I should have called him.

"My friends on that party line kept me posted as to the subsequent history of the school marm. In a few days she asked permission to return to her school. The physician objected strongly on the ground that it would injure her health. It would not do to let her return to those children too soon. She later had attacks of syncope and an affection of the voice. My defeat proved a victory, for the event reacted against the other fellow, in that neighborhood.

"An official county physician may not be the wisest man in the world, but he should have the authority to say which side is right."

Dr. Thomas Parran, Jr., Springfield, thinks there are many communities in this state now in which there is an absence of necessary public health measures. The people are not fully informed as to the value of health service. In many communities physicians look upon public health measures as being synonymous with state medicine. Public health authorities are as opposed to state medicine as are the practicing physicians. There should be no reason for a lack of full cooperation between health officers and practicing physicians. The aims of both are identical. Where cooperation does not exist it will be found to be due to: 1. The direction of health work by enthusiastic but misguided lay people; 2. lack of training on the part of health officers; 3. failure of health officers to inform physicians fully as to the health program to be undertaken in a community, or 4. lack of understanding on the part of the physicians of the aims and purposes of the modern public health movement. The science of preventive medicine cannot be applied for the benefit of the people to the fullest extent unless harmony and team-work exist in fact as well as in theory between all branches of the medical profession.

Dr. Wm. Keister, Decatur, Ill. (closing): This splendid discussion has interested me very much. I wish the whole society could hear it. We could get together as health men and men in practice if we could have papers along this same general line presented at joint meetings. I did not mention in my paper about what a health officer should be. There are so many questions that could be brought up, we have only tried to emphasize the more important ones. Many people

feel that health officers should be physicians—there are a good many things to be said on both sides. It would seem that medical training is very desirable for a health official to have, yet on the other hand, I have seen some very efficient lay health officers. They can work in harmony with the physicians, who can then work out the details. I feel it is more desirable if we could have qualified M. D.'s. As a matter of fact the country is not turning out health officers fast enough. We are going in a very few years to have a demand for health officers that we will be unable to supply. Many doctors are not willing to make the sacrifice financially to give up private practice for public health. I think you will agree that a successful health officer does not make the salary that an equally successful physician does. Another point—a man may do a good piece of work in a community for three or four years, and he may be cast away to hunt out a job somewhere else, owing to a change in party politics, or some other reason. Cooperation with the physician is a big thing. It is the whole thing. I do not believe any public health work can be at all successful until the local physicians get behind it. And it will only be successful in proportion to the amount of cooperation given by the local men. Some doctors do condemn public health work. We do not have much trouble with the best men in the profession as a rule or the men who keep in touch with the advances of scientific medicine. But the fellow who does not attend his medical society, who does not keep in touch with what is taking place or who has not studied the problem—he is the one we are going to have trouble with. Of course we cannot expect men who are busy in treating diseases to be as enthusiastic as we are. But they might pat us on the back occasionally and tell us we are doing a good piece of work. Then the patients help to stir things up too. You know the sort of thing—he asks you if such and such a remedy or procedure is good, and if you say well, I really don't know, he reports to his doctor, "Dr. Blank said this is no good." That does not help to create good feeling. It is difficult to get the right viewpoint. I do not believe many of you men would consider yourselves expert surgeons, competent to take out brain tumors, for instance. Personally I would be scared to death. That is the surgeon's speciality. So is public health. But when it comes down to matters of diagnosis the health officer should consult with the physician. Health officers as a rule, I think, want to work with the physicians. I have seen some fellows who were never intended for public health work. The man who stays in public health has to be a big man. He must be ready to sacrifice himself. He should be of the highest integrity. He should attend medical meetings, and mingle with the doctors as much as he can. I know personally I try to carry out this program as far as I can, and I know that by this means I have put some things over that I could not have done otherwise, and I have lived with, and even slept with some of these people, and they put the thing over for me because they liked me and thought I knew what I was about. We find a few nurses who

are inclined to go into the field and recommend treatment, sometimes when they do not mean to, and sometimes when they do mean to. Most of them steer clear of that. Health officers try to impress upon their nurses never to recommend treatment and never to recommend a certain doctor. A few days ago a doctor came to me and said "Your nurse told one of my patients to go to see another doctor." I did not believe that nurse would do such a thing, and I told him I was going to straighten this matter out. I went to the nurse and told her what had been said. She said, "That woman has been trying to get me to recommend a doctor for the past three weeks, and finally the other day she asked me if Dr. Smith was a good doctor, and I said he was all right." So you see the patient went to her doctor and said that the nurse has recommended Dr. Smith. Quite often the people tell the doctor one thing and tell you something else. These things can be straightened out if we get together in conference and talk things over. The trouble is with most of us that we don't get together, and when people say things they are misinterpreted, and by the time they get around again it is something entirely different. We do not want to practice. Lord knows I wouldn't practice for anything in the world. I don't say that I would not practice under some conditions, but I would rather not practice, but people come to us continually and want us to do so. Some of them say, "Well, I don't need a doctor, but won't you come out and see me," and it frequently is hard not to let some word slip that might make trouble. The health officer should be an umpire, as Dr. Simpson said. He is a better buffer. I was told when I went to my present location that I was the buffer between the public and the medical profession. There are some people who have germophobia. Others think you are imposing a hardship on them. And some of them are certainly difficult to handle. Most of the difficulties, however, can be straightened out if we could have conferences more frequently and work on the basis of friendship. The longer I am in health work the more I believe in friendship—personality. When you get to the point where your enthusiasm is dimmed, which it sometimes is, you are beginning to fail as a health officer. First and foremost the health officer is a physician, just like another physician, and he is just trying to do these things in a natural, common sense way; the practitioners sooner or later will realize that he is not trying to deprive them of their income, but just wants to help.

AN ADJUSTABLE SPLINT FOR FRACTURES OF THE NOSE

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One of the greatest difficulties in the treatment of nasal fractures lies in the proper retention of the fragments. There have been splints without number that seemed to serve for a time in the majority of cases, but all of which at some time

or other failed when the case was of an unusual type. The great trouble has been that none of the splints heretofore devised have provided for a definite fixation of the apparatus.

In a previous communication¹ I pointed out the drawbacks associated with the various types of splints commonly used and called attention to the advantages which my apparatus possesses. These are in brief: First, a definite point of fixation from which the apparatus may be adjusted; second, constant intranasal support of the bony bridge; third, counterpressure against the sides of the nose at any desired point; fourth, the apparatus can be adjusted to any size or shape of nose.

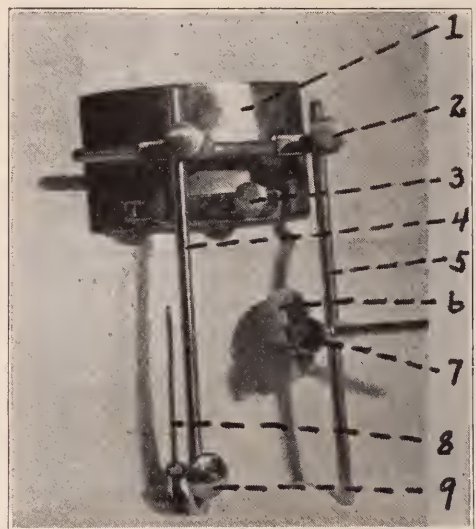


Fig. 1. The assembled splint. Details in text.

In view of the fact that a slight improvement has been made over the original model and also because we deem a thorough understanding of the proper application of the splint necessary for a successful result, we present herewith a series of photographs showing the various steps in the procedure.

Figure I shows the splint assembled. The curved metal plate (1) has a projecting post in the center which supports a horizontal bar about three inches long by three-sixteenths of an inch thick. This plate is to be imbedded in a plaster head cast so that the central post is in the median line of the forehead and the bar as nearly as possible horizontally placed. The proper application of the cast is of the greatest importance and is shown step by step in figures 2 to 8. One item fails to show in the picture, namely, the incorpo-

1. *Annals of Oto., Rhin. and Laryng.*, June, 1924.

ration of a Gigli saw in the plaster bandage which facilitates removal of the cast at the termination of the treatment.

After the cast is thoroughly dried the patient is anesthetized and the fracture reduced. If it is an old fracture it will be necessary to saw the nasal bones free and refracture the entire

of the head plate. The long adjustable rod is then passed through the aperture of the block at the same time that the intranasal bar (8) (which is very thin and flat) enters the nose. They are adjusted by means of the set screws (2) and (9) so that the distal portion of the intranasal bar rests securely under the bridge of the nose. Fur-



Fig. 2. A single strip of muslin bandage tied loosely under the chin.
 Fig. 3. Stockinet pulled over the eyes, ears and below the occiput.
 Fig. 4. Two or three turns of cotton lint padding.
 Fig. 5. Several layers of plaster bandage incorporating the head plate.



Fig. 6. Muslin bandage released from below the chin pulling the soft plaster well up over the auricles.
 Fig. 7. Muslin bandage tied over the vertex. Shows cast fitting snugly from above the brow to below the occiput without pressing on the auricle.
 Fig. 8. Front view of completed cast.

nose, the exact technic of which is a matter of individual choice and will not be discussed in this essay. The nose having been mobilized and adjusted, the next step will be the application of the rod (4) carrying the intranasal bar (8). A sliding block (2) is first placed on the horizontal rod and brought medially up to the center post

ther support is gained by a flat-headed screw (3) in the head plate which can be adjusted into contact with the long adjustable rod, thus preventing the possibility of it sinking onto the nose. On the opposite side of the apparatus we then apply a plain rod (5) (without intranasal bar) which carries a sliding block (7) by which a pad

(6) may be placed against the side of the nose to prevent side-slipping of the fragments. As a rule we use this pad on the previously convex side of the nose.

This is the application as we have employed it in the majority of cases. In recent fractures there is less tendency to slipping of the fragments than in old cases that have to be refractured, and where we find after replacement that the fragments seem to hold, we have been content to omit the intranasal bar and employ two plain rods carrying pads for the sides of the nose. Great care and watchfulness must be exercised in the use of external pressure because of

can be treated without interfering with the support of the bones. In such cases we get along with the intranasal support alone.

The objection that the intranasal bar may cause pressure necrosis within the nose, is in our experience of no great importance. The area of contact between the bar and the inner aspect of the bridge is limited and its location is far enough removed from both the respiratory and olfactory tissues that even if necrosis and adhesions follow they can in no way interfere with the major functions of the nasal cavities proper.

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THE PREVALENCE OF GOITER IN ILLINOIS

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Simple goiter was noted by writers long before the Christian Era. Hindu records of 2000 B. C. describe thyroid enlargement. Confucius knew of it. The Egyptian, Greek and Roman physicians studied its clinical manifestations and left observations concerning swollen neck. Goiter has been known to exist as an endemic disease in the Alps since the time of Pliny. Marco Polo reported its presence in Central Asia in the thirteenth century.

The home of this disease on the continent of Europe is in Switzerland, but it is also prevalent in Austria, Spain, France, Germany, Russia and the Scandinavian Peninsula. The magnesium limestone district of England has been long noted for the enlargement of the thyroid gland, which is known there as "Derbyshire neck." Asia, Africa and South America have their centers of this disease.

In Canada the malady is by no means infrequent in the Province of Quebec and in the city of Montreal. It is very common in the limestone regions at the end of Lake Ontario in the Province of Ontario. The early explorers of the Great Lakes frequently reported its occurrence among the Indians inhabiting their shores. In this locality its greatest prevalence tends to be co-incident with the hard water of the Niagara limestone. There are definite goiter areas in Oregon, Montana, Nevada and Colorado. In fact, from the Atlantic to the Pacific and from the Great Lakes to the Gulf of Mexico there are sections of the country in which endemic goiter is prevalent.



Fig. 9. Typical application of splint: one intranasal bar applied on previously concave side; extra nasal pad against previously convex side.

the danger of pressure necrosis. The pads should be released three times daily for a short period and the external tissues lightly massaged. We release the pads entirely over night. The intranasal bar is left in place from three to six days and constitutes the main support of the fracture. After the first few hours it occasions but with very little discomfort and being very small is placed in the angle between the bridge and the septum, causing no interference with breathing and permitting nasal drainage and irrigation.

Another advantage lies in the fact that no external dressings are required and in cases where there is external trauma to the nose the lesions

Goiter is characterized by the enlargement of the thyroid gland, which occupies the lower portion of the neck anterior-laterally. There are two forms of this condition: simple goiter which is primarily a swelling of this gland, and exophthalmic goiter accompanied by the distention of the eyeballs, anemia, overactivity of the heart, tremor, muscle weakness, mental instability, and general organic disturbance.

The thyroid tends to enlarge during adolescence, but the great variation in its incidence in different localities and even in adjacent commu-

a five year period was 24.5 per cent.; the men, 4.6 per cent. The attempt is made herewith to indicate the prevalence of endemic goiter in this state. Special considerations are presented in connection with its distribution.

The statistics presented are based upon the work of forty or more well-trained doctors, experienced in the making of physical examinations. While standard forms were used and definite directions were given, no attempt was made to direct special attention to the thyroid gland. The data is therefore more valuable, because it presents the consensus of opinion uninfluenced by over-emphasis or undue concentration upon a particular condition. It does, I believe, under- rather than over-estimate the existence of simple thyroid enlargement in this state.

To show its relative prevalence in certain districts of Illinois, the state was divided into three sections by irregular lines through county boundaries from east to west, and into two parts by similar lines from north to south. (See chart I.) Comparison of the incidence of goiter in men and in women in the divisions produced is shown in Table I.

TABLE I

Incidence of Goiter in Certain Portions of the State

	Women	Men	Total
	%	%	% of total number
North Section	43.5	9.6	21.2
Middle Section	36.7	6.7	13.1
South Section	27.8	5.2	12.4
East Section	31.1	5.5	17.0
West Section	39.6	8.2	15.2

These arbitrary divisions are interesting, because they show that the occurrence of thyroid enlargement, taking men and women together, tends to decrease from north to south and from east to west. While the directional tendency of reduction is definite, its explanation is not obvious. The decrease in prevalence with the increase in distance from the Great Lakes may indicate geological formation influencing iodine availability. In the comparison of goiter incidence in the east and west divisions of the state, the explanation would seem equally logical. It is seen by the table that when men and women are separated in the east and west sections, the decrease runs from west to east. The change is due to the fact that three times as many students come to the University from the east side of the state. The percentage of the total number having thyroid is the more valuable figure in

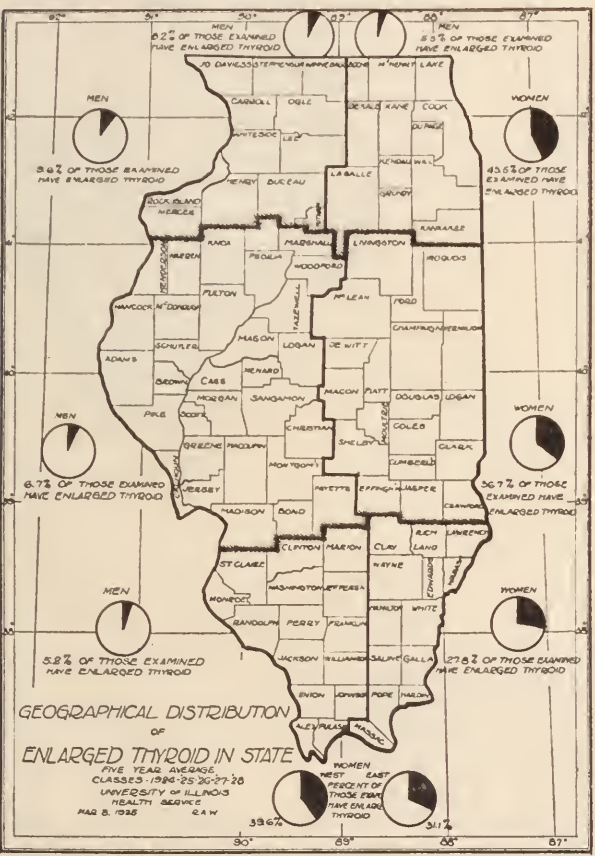


CHART I

nities excludes age as the decisive factor. Its wide prevalence in children and in mature individuals in certain districts also discounts the influence of age. Goiter distribution points to an environmental cause which is now known to be a lack of iodine in water, soil, and food.

Distribution in Illinois

On the basis of the total of 15,154 physical examinations of which 10,829 were men and 4,325 were women high school graduates distributed over Illinois, it was found that the mean average of thyroid enlargement of the women for

importance of the presence or absence of enlarged thyroid in a few individuals.

TABLE II
The Occurrence of Goiter by Tiers of Counties as Given in Chart II

Tier	Men %	Women %
1	10.3	52.7
2	9.5	33.3
3	8.9	44.3
4	14.4	25.6
5	4.9	33.9
6	5.2	50.3
7	6.8	44.8
8	4.3	30.0
9	4.4	35.7
10	8.3	22.2
11	3.1	42.3
12	5.0	20.5
13	2.9	31.0
14	2.8	15.6
15	8.8	35.2

EXTENT OF ENLARGEMENT

Charts III and IV show the general degree of thyroid enlargement in both men and women ex-

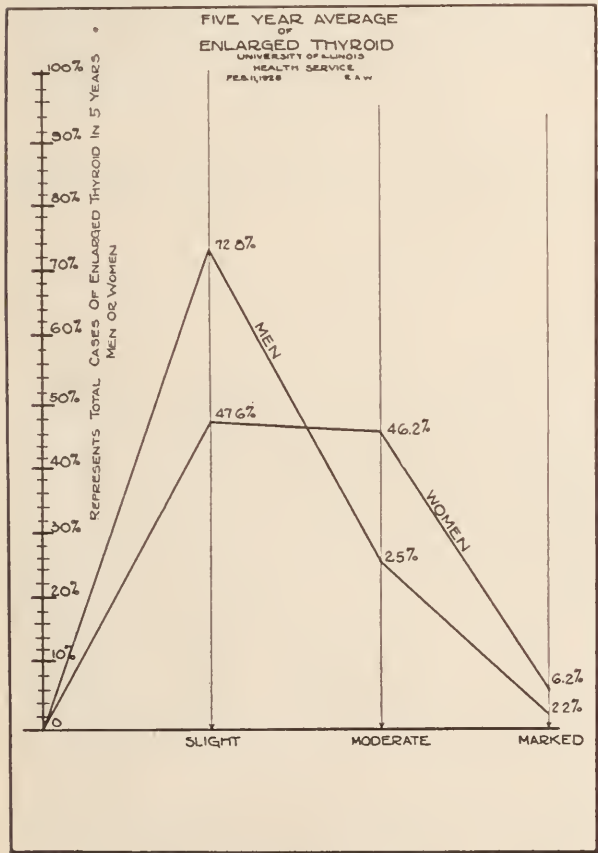


CHART III

amined for a period of five years. They reveal that while nearly three-fourths of the men have only slight enlargement, less than half of the women are included in this group. Only about one-half as many men as women having thyroid enlargement have moderate sized goiters. Approximately three times as many women as men

have marked thyroid enlargement. Simple goiter in females is more frequent, more marked, and more persistent than in males. In the men,

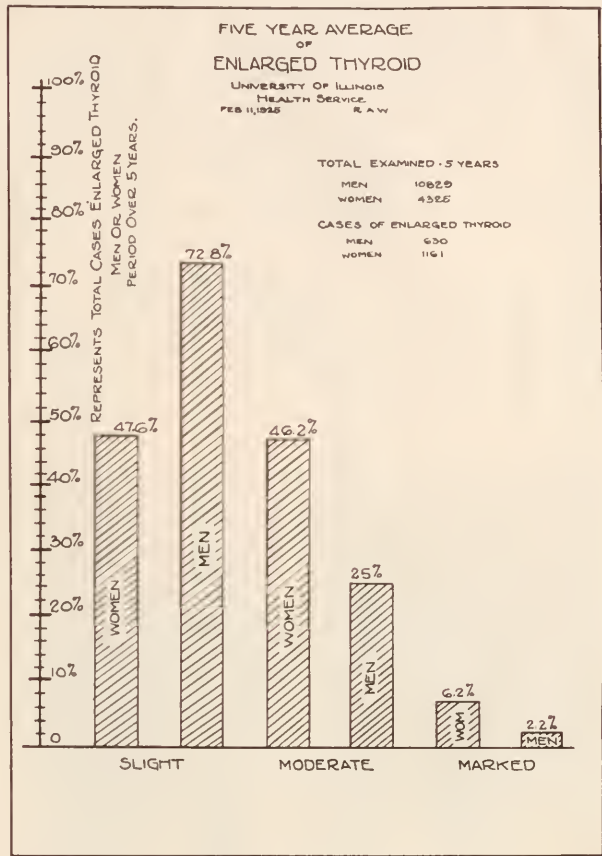


CHART IV

the condition tends to be slight and to disappear rather promptly with the appearance of adolescence and maturity.

From Chart V is seen that there is little difference between the incidence of goiter in the rural and urban portions of the state. The differentiation between city and country is based upon 5,000 population. This arbitrary division is not satisfactory for this purpose, because in many small towns and villages much of the food consumed in them and in their vicinity is brought in from the outside, and the effect of local iodine deficiency is not reflected by the presence of thyroid enlargement. The women, who are more susceptible to iodine deficiency than men, promptly show a smaller percentage of simple goiter where the food is shipped in.

PREVENTION

The early Greek treated goiter by the internal administration of the ashes of burned sea sponges. Among mediaeval physicians Roger of Salerno, who practiced about 1170, was the first

to recommend treatment of the condition by the giving of the burnt residue of seaweeds and sponges. It was not until 1820 that iodine was first knowingly used by Coindet as a means of treating enlargement of the thyroid gland. He also demonstrated that iodine was a substance in

part of potassium iodide to 5,000 parts of salt), by adding sodium iodide to the water supply and through foods containing iodine. A convenient method in dealing with children is to give them one chocolate wafer or tablet once a week throughout the year. The danger involved in such doses is practically nil. In exophthalmic goiter, iodine should be taken only under the direction of a physician. Even in this disease its value has been shown by Boothby, Plummer, and others.

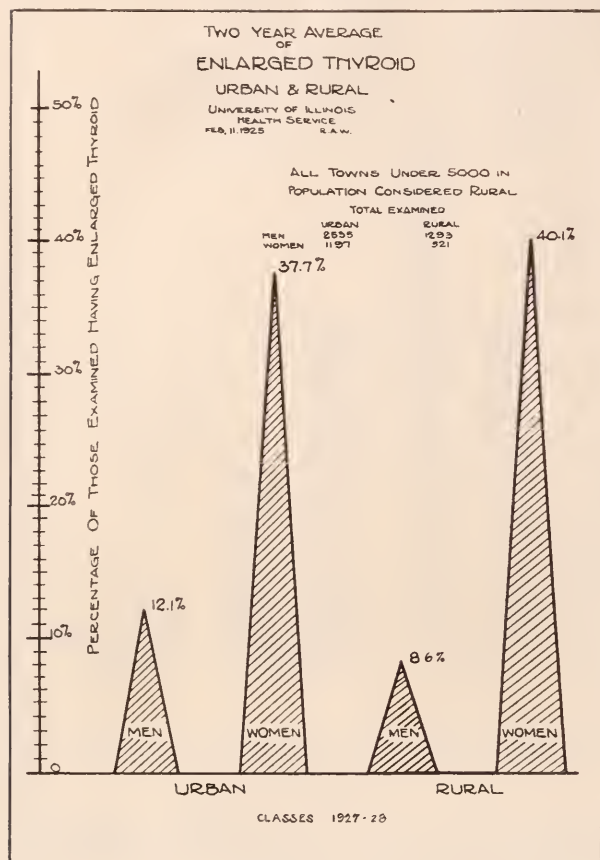


CHART V

seaweed that made it valuable in the treatment of thyroid hypertrophy.

Chatin, a Frenchman, in 1850, was the first to show that small amounts of iodine would prevent endemic goiter and cretinism. Marine, after years of experimentation in using iodine prophylactically in animal experimentation, began its administration to children in the schools of Akron, Ohio. Later, both he and Kimball so clearly demonstrated the value of iodine in the prevention of simple goiter that its use has rapidly spread through the goiter regions of the Great Lakes. In Switzerland, the results with iodine were so extraordinary that its administration as a preventive has been recommended as a public health measure.

For the purpose of goiter prevention, iodine is given in chocolate wafers containing ten milligrams of an organic iodide, as iodized salt (one

COMMENTS

1. Simple goiter is very common among boys and girls of high school age in Illinois. Approximately 5 per cent. of the former and 25 per cent. of the latter have some hypertrophy of the thyroid gland.

2. This condition in boys tends to be slight and to disappear with the approach of adolescence and maturity. It is, however, far more frequent in males than is generally supposed.

3. Goiter is more common, more persistent, and more marked in girls than in boys.

4. In Illinois, the incidence of goiter tends to decrease from the north southward and from the east, westward.

5. In this state there seems to be some tendency for goiter prevalence and population density to show coincident rise and fall.

6. There is not much difference in the prevalence of goiter in rural and urban sections. Although the greatest population density is in the northern part of the state, the section with the highest goiter incidence, fewer women in the city than in the country have goiter. This fact, taken in connection with the decrease in thyroid enlargement in both men and women in the tier of counties containing Cook County, may be an expression of food variation, greater accessibility to sea food, and better medical attention to be found in cities.

7. In the comparison of the occurrence of goiter in men and in women in the city and in the country, it is not apparent why, in each instance, the prevalence in men should be the reverse of that in women, who are peculiarly susceptible to iodine deficiency. There may be some dietetic difference not evident. It is not uncommon for diseases due to food inadequacy to show a remarkable tendency in sex selection. For example, in Italy pellagra is about equally prevalent in men and in women; in the United States,

more than twice as frequent in women as in men.

8. The regional distribution of goiter and the direct relation of the thyroid to physical and mental characteristics and its inter-relation with other glands of internal secretion may be a means by which certain districts stamp their local color upon the personality of its inhabitants.

9. The reason for more marked influence of iodine deficiency in women than in men is not clear. The fact that thyroid often shows enlargement coincident with adolescence, menstruation and pregnancy indicates a functional relationship to sex that is still not clearly defined.

10. As administration of amounts of iodine, too small to produce harmful results except in the most unusual cases, will prevent hypertrophy of the thyroid, every girl between eleven and sixteen and every pregnant woman in endemic goiter regions should be given enough iodine in chocolate wafers, as iodized salt, Lugol's solution, sodium iodide, or shipped-in food containing iodine, to protect them against goiter.

PLASTIC INDURATION OF THE PENIS AND OF THE CORPUS CAVERNOSUM WITH A CASE REPORT

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Before I present the case, I should like to make a few remarks on the subject in general.

Plastic induration of the penis, also called "fibrous sclerosis of the penis," is a rare condition. There are only about 200 cases reported. Plastic induration may occur almost in any part of the penis, but there is a certain place of predilection, the dorsum of the penis. In most cases described in literature the induration had taken place on the dorsum of the penis between the skin and the corpora cavernosa.

The characteristics are: Slow and gradual development sometimes over a period of several years. Formation of a circumscribed hard mass in the form of a plate, cord or knot. The size of the indurated mass may vary from that of a pea to a walnut. Occasionally there are multiple indurations. The penis when erect may show a deformity. Coitus is either impossible or at least interfered with. In some cases there is a sharp pain, particularly during erection, in other cases there is no pain at all.

The course is a very slow one. The condition

may cease spontaneously or be arrested for many years. The progress is always limited. The sexual disability occasionally gives rise to a neuro-pathic condition, sometimes to grave melancholia.

Histological examination reveals marked fibrous tissue increase, mixed with elastic fibres. In some cases there was formation of cartilage or bone. The tissue is rich in cells and blood vessels. The latter have thickened walls due to an overdevelopment of the adventitia with many nuclei in it.

Occasionally the disease follows an inflammatory conditions. Infection arising either extrinsically from ulcers, boils, abscesses, traumatism, etc., or by way of the blood stream may cause plastic induration. In most cases, however the



Fig. 1—Antero-posterior and lateral x-ray picture of the penis after the injection of bismuth paste, showing the channels of the urinary fistulae.

etiology is unknown, and the induration develops apparently without any cause. Gout, diabetes, arteriosclerosis, leucemia are described as causes. Other writers ascribe the induration to a senile sclerosis of the elastic tissue of the tunica albuginea with compensatory formation of fibrous tissue.

There is a striking relation between plastic induration of the penis and Dupuytren's contraction of the hand as to their histological and etiological character.

The prognosis is dubious as to complete cure.

The treatment may be conservative or operative. The former aims to eliminate the exciting cause (diabetes, syphilis, rheumatism, etc.) and to modify the condition by applying heat, bathing, massage, injection of fibrolysin. Also x-ray treatment was tried. However, all these conservative treatments have not been very successful. The operative treatment consists of com-

plete removal of all fibrous hard masses. It has been successful in some cases, in others a recurrence took place. Sonntag reports 13 cases of complete recovery out of 22, in which operation was performed by different authors.

CASE REPORT:

M. G., the patient is 38 years old. He came to the hospital the first time on June 22 last year. About a month before the first examination a swelling developed on the penis, particularly beneath the prepuce. Gradually the whole penis became greatly swollen, inflamed and extremely painful. Urination was very painful. He stated that he had difficulties in urinating ever since he can remember. The jet of the urine was very thin, and it always took him 5 to 10 minutes to empty the bladder.

At the first examination the distal end of the penis was found to be enlarged almost to the size of an ordinary egg. The external orifice of the urethra was extremely small, and there was some purulent discharge from the urethra showing staphylococci in smears. The



Fig. 2—"Plastic induration" shortly before the operation.

inguinal lymph nodes on both sides were enlarged and tender. The Wassermann reaction was negative and the urine examination showed nothing abnormal. The patient was treated with bathing and dressings. Two days later about half way between the corona and the root of the penis an abscess developed which discharged a considerable amount of pus. This was about the 25th of June.

On July 1, one week after the first examination, the inflammatory edema had subsided to a great extent, but one could feel a hard mass, about an inch long at the distal portion of the penis, corresponding in shape and location to the end of the corpus spongiosum of the urethra and to a lesser extent to the corpora cavernosa. (See Fig. 1.)

On July 12, three weeks after the first examination, all discharge had stopped. The enlarged inguinal lymph nodes had decreased in size. The hard mass at the end of the spongy body was still present. Location, development, consistency and all the other clinical features pointed to the diagnosis "Plastic induration" and the later histological examination proved the correctness of the diagnosis. An x-ray plate taken at that

time did not show any bone formation within the indurated masses.

On October 27 the patient was readmitted to the hospital. The condition of the induration was about the same, except that on the inferior surface of the penis in the region of the induration near the end of the urethra there were several minute openings, which proved to be the ends of urinary fistulae, as urine escaped on pressure. The external meatus was nearly closed. Bismuth paste was injected into one of the fistulae, and the x-ray plate showed many lateral channels leading from the urethra to the skin. (See Fig. 1.)

The etiology of the plastic induration was clear. The stricture of the urethra had given rise to the formation of the urinary fistulae and to an infection, which had caused the plastic induration.

Dr. Carl Beck operated on the patient several times, resected and removed the anterior part of the urethra and all the indurated masses, and restored normal conditions afterwards again by means of a urethral plastic.

The histological examination of the removed masses by Dr. Pilot showed the following condition:

"Section through fibrous mass reveals connective tissue with scattered areas of round cell infiltration, often perivascular. The vessels show moderate endarteritis. The cells are predominantly plasma cells and lymphocytes. Skin presents similar processes with deposits of brown pigment under epidermis."

SUMMARY

Plastic induration of the penis or of the corpora cavernosa is a rare condition, characterized by the formation of hard fibrous masses within the substance of the penis, mostly at the dorsum.

The prognosis is not very good.

The treatment is either

- (a) conservative: Hot applications, massage, injection of fibrolysin, electricity, x-ray, etc.
- (b) operative: Complete removal of the fibrous indurated masses.

Report of a case: A patient with plastic induration of the corpus spongiosum and the corpora cavernosa, following an inflammatory process was treated with conservative means during several weeks without improvement. Ultimately operative treatment effected a cure.

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HEAD INJURIES*

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It will be generally conceded, I believe, that the study of head injuries with which we will occupy ourselves this evening is one which is liable to be neglected in general hospital practice.

Patients are so numerous, their claims on the staff so varied and pressing that comparatively little time is left for the detailed and exacting study of head cases. And also, I think, it has its explanation in this further fact, that the study of brain pathology is, and necessarily must be, tedious and time consuming and up to the present far from encouraging in ultimate results. And yet, you will find that in any large general practice, brain diseases make up a not inconsiderable part of our clientele.

I propose this evening that we study in a general way, briefly and practically, the nature and treatment of some of those injuries which can be legitimately termed surgical. I am of the opinion that you will agree with me when I say that the prevalent attitude of comparative hopelessness in the treatment of brain injuries ought not to deter us from the study of them. The clinical symptoms and signs are so varied and frequently so confusing in these patients that they constitute a most fascinating field.

While it is undoubtedly true that brain tissue is the most delicate and highly organized structure of the body, it cannot be too strongly emphasized that injuries to it result in reactions entirely comparable to those which occur in other tissues. It is subject to the same reparative reactions when injured and the adaptive phenomena generally termed inflammation is no less marked in these tissues than in others and sound principles of treatment apply here as elsewhere. The difficulty lies in our inability (owing to the extraordinary safeguards with which nature has surrounded this most sensitive of all tissues) to arrive at a correct diagnosis and bring treatment to bear on the injured structures without first removing in part, at least, the protective coverings themselves.

Early, complete and exact diagnosis is nowhere more important than in lesions of the brain, in the first place to prevent a fatal issue and secondly to obviate complications that so

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often follow, chief of which are paralyses and epilepsy. The difficulties in the way of attainment of definite information are due, as just intimated, in great measure to the anatomical barriers with which nature has surrounded these highly organized, delicate and all important structures. The protective coverings of the brain consist of the vascular scalp, the boney skull and the meningeal sheaths.

Apart, however, from difficulties of an anatomical or structural nature the obstructions with which the road to a definite diagnosis is encumbered are still further complicated by the disability of the patient, who is frequently unconscious or restless, or both, to assist us. Notwithstanding these almost insuperable difficulties, in no other class of case is the urgency for early, complete and exact diagnosis and treatment more pressing, both from the view point of immediate as well as remote results. I can unhesitatingly assure you that in none of the injuries which happen to come under our care is preparedness and a definite plan of procedure more essential to our patient's welfare and our own peace of mind, than in the cases under consideration, although heretofore there may have been some excuse for the "Laissez-faire" attitude more or less generally adopted by the profession in these cases.

Today, thanks to a progressive increase in knowledge of the underlying principles, physiological and pathological, to accurate, easily applied diagnostic methods, technique and instrumentarium, no excuse exists for allowing these patients to develop definite paralyses, a lowered pulse rate, Cheyne-Stokes respiration and pulse and that appalling group of extreme intracranial pressure signs, when to operate only hastens the end. Nor should it be necessary to waste valuable time and so lessen the patient's chances by calling in ophthalmologists, neurologists, otologists, rhinologists and the rest. Nothing is so likely to check surgical progress on the one hand or ruin the patient's chances on the other as this division of responsibility.

The problems we have to consider in the case of head injury are the following: 1. What is the nature and extent of the injury? 2. What treatment should be instituted? It is obvious that in injury to a long bone the damage to the bone is of prime importance. In an injury to the spine the trauma to the bone as well as to the

contained cord divides our interest. In an injury to the skull the all-important question is what has happened to the brain. •

When a patient who has just received a head injury comes under our care it is of prime importance rapidly to determine 1. the presence or absence of pallor, 2. cold clammy skin, 3. rapid, running pulse, 4. low blood pressure and 5. particularly note if the pupils are dilated. In other words, the presence or absence of shock is recognized. If present, the immediate treatment is that of shock.

Careful, frequent observation of the blood pressure curve will tell us when we may safely proceed to the examination and treatment of local conditions. When the patient's condition has improved satisfactorily from the effects of shock, a laceration, if present, is rendered surgically clean by excision of all soiled edges and is explored to determine the possible presence of an underlying fracture. Fissured fractures in themselves call for no treatment. Depressed fractures, if found to be present, should be immediately elevated, this to prevent sequels such as epilepsy, headaches and mental derangements which are so frequently found to follow this type of injury if left untreated. If the patient has recovered from the shock but has not regained consciousness and the pulse rate and blood pressure show progressive signs of increase, the deep and tendon reflexes are examined, the intraspinal pressure is taken, normal salt solution is given intravenously if it has not already been exhibited. In brief, in such boundary line cases the determining factor in selection of those suitable for surgical treatment does not depend altogether upon the presence of signs of intracranial pressure but upon whether those signs are increasing or subsiding; the slow pulse, is it getting slower; the increased pulse pressure, is it getting more pronounced; the stupor, is it getting more profound; the rising blood pressure, is it continuing to rise? If so it is obvious that unless immediate steps are taken to lessen the increasing pressure, irreparable damage from medullary edema will result and surgical efforts only hasten the inevitable end.

The advanced clinical picture of acute cerebral compression manifested by coma, slow pulse, high blood pressure, Cheyne-Stokes respiration and the associated findings represent the extreme limit of the ability of the patient's tissues to

compensate for the increasing pressure and, if within our observation, should not be permitted to occur. Let me warn you that patients who remain unconscious with a low blood pressure, rapid pulse and who from a subnormal temperature climb rapidly to a high one, are of uniformly fatal outcome. The patients die from shock and surgical efforts offer little aid because intracranial pressure is not increased. It is in the large number of patients who do not have this great degree of brain injury and yet have serious damage that we should constantly watch for developments, above all for symptoms of increasing intracranial pressure.

You probably have noticed that I have not mentioned the neurologic aspect of these cases. Why? Because it seems to me that as far as the surgeon is concerned only the gross neurologic findings such as hemiplegia, present or increasing, will rapidly be recognized and will affect his judgment. Nevertheless, the value of neurologic examination is not to be underestimated. The physiologic responses to pressure, however, far outweigh it in immediate practical importance. Granted that such is the case, how are we to recognize the proper time for operative intervention?

Naturally many brain injuries are fatal from the beginning, where fatal damage to the skull contents occurred at the very onset of violence, but of the other cases, those which are amenable to treatment, there has, in late years, been developed a technique of management which is simple enough for any painstaking surgeon to understand and, I am convinced, will lead to a happy issue in a far greater percentage of cases than the text-books would lead us to believe.

It is no longer necessary to await the development of focal paralytic symptoms or the complete obliteration of the optic disks by edema before attempting operative interference. Today we know that few cases live to develop focal symptoms and if we attempt operation in such cases our operative mortality will equal the 68% of the past or greater. We now have an instrument, the spinal mercurial manometer, with which we can measure the intracranial pressure in health, disease and injury and through its use we are enabled to apply such treatment to these cases as will serve to prevent, in many patients, the condition of medullary compression, medullary edema and collapse. By means of it, and the

ophthalmoscope, we have discovered that there are certain definite changes in the optic disks which go hand in hand with increased intracranial pressure and which occur earlier than the choked disk condition. The aforementioned observations serve to confirm each other.

A thorough knowledge of the cerebrospinal fluid is most important in the management of these cases. Its existence was first discovered by Herophilous 300 years B. C. It intrigues the historical imagination to find that Corning, an American, first removed it from the spinal canal by lumbar puncture in 1885, though most of our present knowledge we owe to the work of Quinke, who perfected the technique in 1891 and began to apply its use to the study and treatment of diseases.

The amount of this cerebrospinal fluid varies in quantity from 60 to 160 cc. Its normal pressure is 5 to 9 mm in adults and 4 to 8 in children. Brain tumors and injuries frequently increase its secretion, while thyroid extract decreases it. Any disturbance of its secretion or its elimination interferes with the physiological action of the brain. If spinal puncture shows an intracranial pressure above normal, about 16 or greater, observation of the eye grounds at the same time will reveal a blurring of the nasal sides of the disks or perhaps of both the nasal and temporal sides. At this time also the superficial reflexes are exaggerated and there may be present a Babinski, Chaddock, Hoffman, Oppenheim or Koenig reflex. If nothing be done and the patient is allowed to continue in this condition he may enter into the very grave state of medullary compression with a pulse of 50, sometimes as low as 40, respiration 12, choked disks, systolic blood pressure 200, complete abolition of most of the reflexes, deep stupor with beginning Cheyne-Stokes. Intrapapillary here will register about 20, sometimes as high as 40. From this condition he may emerge without operation but will probably develop the later condition known as wet brain and become a mental and physical derelict. If, however, he develops the further state of medullary edema and collapse manifested by a sudden rise of pulse to about 120 or more, a definite Cheyne-Stokes respiration, appearances of papilledema of varying degree of temperature disturbances, death is the inevitable result. No operation or other treatment would save him now. Let me repeat that observation of the eye

ground with the ophthalmoscope, careful notation of the rate of pulse, respiration and systolic blood pressure, together with investigation of the reflexes and an actual mensuration of the intracranial pressure, will enable us to treat these cases with an absolute degree of certainty as to what pathological changes are going on within the head. Success in bringing surgical aid to cases of brain injury will depend on an accurate correlation of these readily observable, general conditions, and their progressive changes with those conditions originating within the skull.

When the patient is in shock, the intracranial pressure is subnormal and no operation is indicated. When the patient recovers from the effects of shock, if he does so, and a brain injury is present, his pulse rate becomes progressively slower, and as the pressure within the skull increases, the respiratory rate decreases and the blood pressure rises to 160 or more. If the cause of the intracranial increase of pressure is localized as in depressed fractures or hemorrhage this additional fact will oftentimes reveal itself in some demonstrable loss of function, in the part or parts supplied. And so it is, that we are enabled to keep close watch on the symptoms and their orderly development and to visualize the contemporaneous intracranial conditions, and a knowledge of the symptoms which indicate that the unaided tissue have reached their limit in the reparative struggle will enable us to bring aid in an intelligent and purposeful manner.

Operative interference consists of subtemporal decompression on the right side in right handed patients when no focal symptoms exist and vice versa in left handed patients to avoid the motor speech area. The depressed fracture can be elevated after decompression has been done or later at a subsequent operation. It should never be attempted before the decompression if the intracranial pressure is as high as 16 because the danger of the increased pressure pushing the damaged meninges through that area of the skull and thus producing laceration of the cortex.

THE DECOMPRESSION OPERATION

The subtemporal is best.

1. It exposes the middle meningeal artery which is the vessel most frequently injured.
2. It is situated over a silent area of the brain.
3. We have here a good pad of muscle and

fascia to serve as a protection when sutured over the bone deficiency.

4. It drains the middle cistern of the skull at its lowest point where most of the pathology occurs.

In chronic cases where the injury has occurred years before or where depressed fractures of the vault have not been elevated, or where the case had been dismissed having cleared up under palliative treatment and where symptoms referable to disturbed circulation of the cerebrospinal fluid arise; in such cases if we can demonstrate in them the presence of persistent increased intracranial pressure as recorded by the spinal mercurial manometer and eye ground changes with constant headache, changes of personality or epilepsy, we should unhesitatingly advise them to have a decompression operation done. The results may be striking even when years have elapsed from the time of injury.

Do not lose sight of the fact that the beneficent therapeutic effects of decompression are not confined to adults alone. It is well known that intracranial hemorrhages occur in the new born infant or may occur before, during or after labor. The symptoms of pressure here are generally delayed but if the hemorrhage is large the symptoms are stupor, failure to nurse, or to cry lustily, or constant crying, bulging fontanelle, accompanied by spasticity of the muscles or reflex disturbances, or even convulsions. Bloody cerebrospinal fluid is present if the puncture is done early, but will be clear if the blood has been allowed time to clot. This condition is often associated with premature labor and when the cord is wrapped around the neck.

Doctor Green of Boston first found blood present in the cerebrospinal fluid obtained by lumbar puncture in cases of convulsions occurring in the new born, and it should be a source of patriotic satisfaction to us to know that drainage of the cerebrospinal fluid for the purpose of relieving intracranial pressure in infants, which is the recognized treatment of today, was first suggested by Dr. Sidbury of Wilmington, N. C.

Owing to the fact that the dura is elastic and the bones of the skull are incompletely ossified, the child's brain can withstand increased intracranial pressure much better than adults and convulsive symptoms may not appear for three months or even a year. Such cases have been classed as spastic idiots. If one should, in these

cases, find definite increased pressure on lumbar puncture these should be operative cases because it is well known that a decompression operation always improves spasticity and convulsions if only an increased pressure is present. It is, of course, obvious that early recognition and early operation will give the most satisfactory results. Late cases with a pressure which does not register above 12 are not good cases as far as prognosis is concerned. The lesson from all this may be summarized thus: Do not neglect a lumbar puncture and measurement of pressure in spastic idiots, and verify with the ophthalmoscope.

SUMMARY

All injuries of the head should be regarded primarily as injuries of the brain accompanied by more or less damage to the skull. In the first stage the actual wound when present with its lacerated scalp naturally more directly arrests the attention. Only the most gross and obvious evidences of cerebral injury such as loss of consciousness and paralysis may be noted. The chief problems at this stage are those of tiding the patient over the period of shock and of getting the wound to heal speedily and, if possible, aseptically. Later if an aseptic healing fails, the wound is still in the foreground of the clinical picture and the prevention and treatment of septic complications constitute the surgeon's primary task.

Very few cases of edema demand operation and then only when there is a constant rise of blood pressure.

Operation upon extensive laceration of the brain offers little hope. It should be done only when edema is so extreme as to demand relief of pressure.

All cases of hemorrhage should be operated on at once.

All cases with definite focal symptoms should be operated on at once, for they generally represent hemorrhage.

Dilated and fixed pupils are almost always a positive indication for operation.

A single observation of high blood pressure is of little value. Continued high blood pressure with a slow pulse is a strong indication for operation.

High pressure of the spinal fluid as shown by the manometer reading is of greater value

than high blood pressure as an indication for operation.

And in conclusion let me add, when the brain has been injured the first duty of the surgeon is to satisfy himself that the local pathological condition caused by the injury is rendered as favorable for repair and as unfavorable for complications as he can make it. Having secured this, his second duty is to give the brain every possible chance of recovering its normal function as soon and as much of that function as is possible. There can be little doubt that complete mental and physical rest, for a prolonged period is the first necessity in order to attain the end in view, and we hold the opinion that in all head injuries where there is evidence that the brain is involved either by bruising, or laceration, at least a month's complete rest in bed and often a much longer time should be prescribed. This measure is so much the more necessary because the patient is often restless and anxious to get up long before he is really fit to do so. It should be the general rule, therefore, not only to enforce the rest but to administer a daily dose of 20 to 30 grains of bromide to the patient for some weeks or even months after his injury. Experience teaches us that this method of treatment goes far to prevent the development of the troublesome sequelae of head injuries in the shape of headache, insomnia, giddiness, depression, exhaustion, irritation and other neurasthenic symptoms and probably exercises a favorable prophylactic influence against traumatic epilepsy.

SYSTEMIC ASPECTS OF ACHYLIA GASTRICA*

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For some reason, difficult to determine, gastric lavage for diagnostic purposes is no longer utilized to an extent comparable to the information obtained. There are several causes for the neglect of this procedure. The most important, perhaps, are the fancied discomfort to the patient, and the supposed technical difficulties of the procedure. Of almost equal importance is the introduction of pseudo scientific

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refinement suggested with a view of attaching undue importance to variation in the acid percentage in comparative diagnosis of different conditions or in consideration of an ideal curve in the individual case.

The popularity of x-ray examination, both with the profession and the laity, has also had the result of almost completely superseding the older methods of Kussmaul. In a consultant's practice, at least twenty patients give a history of x-ray survey to one who has had diagnostic study of gastric contents. But diagnostic gastric lavage is difficult neither for the patient nor the physician when good technic is used. With the patient recumbent, the tube is most easily introduced, extraction is without trouble, and in addition, inflation demonstrates the size and position of the stomach as well as with the x-ray, and also offers opportunity to estimate the thickness of the stomach wall.

Attempts to formulate an ideal curve of acid secretion are doomed to failure. So many different causes, some physical, but more in that peculiar psychic realm dominated by the emotions, influence gastric secretions, that there is just one point of importance in gastric analysis—is free hydrochloric acid present? If acid is present in examination after the Boas meal, the percentage is of very minor importance. If acid is absent, the macroscopic appearance of the pasty content tells at once complete achylia. Only with liquid gastric content is it necessary to use repeated examination, or the Rehfuß, and then this test need be continued only till the acid is found.

X-ray examination has its place in the diagnosis of gastric disease, but it should supplement and not replace gastric chemistry. From the hands of the x-ray expert, reports must be accorded due weight, but they do not make the diagnosis—so a negative report from the roentgenological examination is not the finality of diagnosis, and the so frequent report of dilated or fallen stomach, much as it satisfies the patient, is not a diagnosis.

Even when the history points to ulcer, lavage should precede x-ray examination. No matter how well trained the clinician, he cannot differentiate from the patient's description in all cases between the distress caused by too much or too little acid. Proof should be sought by lavage in those cases which have the classic symptoms

of achylia, red tongue, gas belching, regurgitation, vomiting and diarrhea. But only a small proportion of cases without acid present these symptoms, and, consequently, unless lavage is utilized as a routine procedure, many cases of true or symptomatic achlorhydria are overlooked.

The literature of the last few years has demonstrated the acceptance of the postulate that absence of acid must be demonstrated in pernicious anemia and by equally cogent reasoning, spinal cord changes with negative Wassermann and absence of acid justify the diagnosis and prognosis of pernicious anemia regardless of typical blood findings.

If the old idea of temperaments were retained in medicine, a pernicious anemia temperament or type might be described. We are all familiar with the picture—a moderately fat individual, prematurely grey, with a little tendency to baldness, frequently with leukoderma, inclined to early digestive troubles, with red tongue and gingivitis. Such is the patient whose appearance at once suggests a blood examination. In the history, there is usually a complaint of paresthesia. Taken as a whole, these manifestations indicate study of the gastric function. Taken each separately, as an indication for lavage, no matter in what condition observed, the results of gastric analysis are surprising.

With leukoderma is, of course, included leukoplakia, premature grey hair and canities. It is but a short step, and quite worth while, to include other disturbances of pigmentation. Chloasma and undue tanning, the bronzing of Addison's disease, should be studied from this angle. In occasional reports on pellagra, achylia is mentioned, and the pigmentation in this condition may have the same significance. Certain changes in mucous membrane, aside from the atrophied tongue, must all raise the question of achylia. Of interest to the gynecologist is carunculosis; achlorhydria is a very common concomitant of this distressing condition.

In leukoplakia, there is a specific element in about half the cases, but in the half not specific, a large proportion will be found to be associated with achlorhydria. In true leukoderma, the absolute symmetry indicates nerve influence, and the frequent association with determined spinal cord lesions of pernicious anemia, in the form of paresthesia, seems to indicate, at least, a pos-

sible common factor. About 85 percent of leukodermas show absence of acid, and so leukoderma as an indicative sign demands gastric analysis, and such cases as have no acid should be considered potential pernicious anemia.

Premature grey hair and canities are similar signs, but have their additional characteristics. Such conditions are more markedly hereditary, and in just those occasional reported instances of familial pernicious anemias, it will be found that premature grey hair is part of the clinical picture. Other causes are, undoubtedly, present in premature greyness, but a sufficient proportion present achylia to make gastric lavage a part of the examination no matter what symptoms are found.

The bright red tongue of symptom producing achylia is well known and a similar condition of atrophy of the buccal mucous membrane is found in pernicious anemia. Closely related to this typical red tongue are other conditions of similar import. The so-called geographical tongue denuded in places of all mucous membrane is apt to be associated with achlorhydria. The broad flabby tongue showing indentation of the teeth has this same significance. Canker sores in many cases are dependent on deficient acid secretion, either constant or intermittent heterochlorhydria.

Inspection of the tongue is almost a lost art, but tradition remains persistent in the patient's fear of a coated tongue. Examination of gastric contents, when any of the above deviations from normal appear in the tongue, brings to light many interesting associations.

The beef red tongue is characteristic in diabetic coma. Test of the vomitus in such cases always shows absence of acid. And in those cases which recover from coma, a gastric analysis shows persistent, though perhaps, not constant achlorhydria. Routine stomach examination in diabetes reveals in almost every case lack of acid. This applies particularly to the severe juvenile type of diabetes, but even the fat diabetics of the fourth decade carry a digestive burden which failure of acid formation may increase.

Goiters of various types present the same anomalies of the tongue. In hyperthyroidism, the tremor and the color are often found. Particularly in the terminal stages, with fibrillation, the tongue is identical with the tongue of

diabetic coma. In the early stages of hyperthyroidism, the stomach condition is one of heterochlorhydria, the periods of exacerbation coinciding with those of absence of acids. With toxic adenoma, the advent of fibrillation may be expected. Gastric analysis at such a time shows absence of acid and in some cases of adenoma, there is persistent achylia. Myxedema too, even in the milder types, shows achylia, and in that perplexing type of mild myxedema, with fatigue as the only symptom and a peach blow complexion, as figured by Bramwell, the most significant sign, the accompanying achylia, at once suggests pernicious anemia, but when acid and thyroid substance are administered the astonishing results immediately determine the proper diagnosis.

Not only in the fibrillation of toxic adenoma is achylia often found, but when this type of cardiac irregularity is due to any of the other causes, lack of acid may be demonstrated in about 50 per cent of cases. The general appearance of such patients suggests the type previously described as characteristic of those with achlorhydria—and even if a stomach examination seems contra-indicated on account of the heart condition, a therapeutic test with acid can do no harm. Surprising results are sometimes brought about by combining acid with either the indicated digitalis or quinidine. Fibrillation associated with other conditions, notably mitral stenosis, may have a concomitant achylia, and in fact, heart failure itself may be a cause of achylia, or in a measure dependent on pre-existing lack of acid.

Colon bacillus infection of the genitourinary tract is yet another condition in which achlorhydria is a factor—so much so that each case in which there is colon bacillus infection outside the gastrointestinal tract, the routine examination should include the chemistry of the stomach. In gingivitis, especially when there is ulceration at the base of the lower central incisors so characteristic of pernicious anemia or the bleeding gums of generalized pyorrhoea, an achylia will frequently be found.

Parasthesia of any description, and minor symptoms of spinal cord changes indicate lavage, even before lumbar puncture, since the combination of achylia and cord degeneration may pre-

cede the characteristic blood changes of pernicious anemia many years.

Many cases of chronic acute pulmonary tuberculosis have periods of achylia and it is during this period that the disease is most progressive.

It is difficult to formulate all other definite indications for gastric lavage, but within the last year, seven patients with abdominal scars, but with no relief of symptoms from the operation, have been found to have achylia. Were gastric lavage utilized in all cases of abdominal distress of uncertain origin, and especially in the legendary dyspepsia from chronic appendicitis, this latter myth would take its proper place with the Roc's egg and the Unicorn's horn.

The association of achylia and pernicious anemia has been attracting much attention and it is now rather generally accepted that the achylia stands in a definite etiological relationship to pernicious anemia. There is, however, no generally accepted theory of the pathogenesis, although two main theories are offered. The one, that failure of the antiseptic action of hydrochloric acid allows the products of oral sepsis to directly invade the intestines and these produce hemolytic poisons; the other theory is based upon failure of proper process of proteolysis in the absence of gastric acidity, and the production of toxic substances from the protein molecule which are hemolytic. Much clinical and experimental evidence must be forthcoming before either theory can be definitely accepted.

In the continued discussing of Pavlov's theories of the physiology of the stomach, many of his ideas of gastric secretion are subject to attack, but his postulate of the antiseptic action of hydrochloric acid in the concentration found in the normal gastric secretion has been practically accepted by the physiologists, although full application of this fact has generally escaped clinical judgment.

To go back a step further and make inquiry concerning the cause of achylia, leads us at once to a wide field of speculation. In cases of symptom producing achylia, careful inquiry fails to determine a definite date of onset nor can an antecedent cause in the nature of acute infections be ascertained. Certain types of disease seem to have achylia which is without systemic influence of the condition here discussed. Achylia is an almost constant concomitant of carcinoma

ventriculi—and only slightly less constant in cancer involving other portions of the gastrointestinal tract. Gastritis, formerly so common in diagnosis as an euphonic confession of ignorance, has a true but small place in nosology, and a small percentage of cases of gastritis show anacidity.

Emotional suppression of hydrochloric acid is a common defense reaction of mankind. Each of us, in direct proportion to his poise, has been disturbed by this particular symptom from which recovery is more or less rapid and permanent. In the true neurotic, this, as other emotional reactions can be exaggerated almost beyond belief. Variations from complete achlorhydria to HCl 120, may be found at subsequent examinations. Whether emotional reaction eventually determine conclusive suppression of hydrochloric acid can scarcely be determined without long clinical investigation.

Congenital absence of hydrochloric acid may be assumed. In a recent investigation of gastric secretions in children from 6 to 15, Wright¹ has shown that 5 in 250 showed absence of acid.

Felsen² in studying the gastric function in epilepsy has demonstrated achylia in 15 per cent and hypochlorhydria in 11 per cent of his patients (mostly young men). 19 per cent of his controls showed achylia.

Eggleston³ has recently reported the results of fractional analysis in 2730 cases; with 10 per cent showing persistent achlorhydria and 8.5 per cent with no free hydrochloric in the first hour.

Hurst⁴ reports practically the same figures; 10.5 per cent in a series of 235 cases.

These and other reports, all tend to show the absence of hydrochloric acid in about 10 per cent of normal adults. My interpretation of these reports is somewhat different from that of the authors. Might it be suggested that lack of acid predisposes this 10 per cent group to many different clinical conditions. There is an accepted association between pernicious anemia and achylia and may I suggest that absence of acid is an important element in the development of many different conditions not previously associated with achylia.

In gastric intestinal infections, lack of acid may play an important part. Even in typhoid and cholera, there has long been a belief that

fear of the disease predisposes the individual to the disease, and his belief may have some foundation in fact since fear is one of the main causes of temporary diminution in acid secretion.

Certain of the general conditions in which the pathogenesis is still a matter of argument should be studied from the standpoint of gastric secretion. The susceptibility of individuals living in the same environment to pellegra, sprue and berri-berri, by a rather remarkable coincidence is about 10 per cent, which is the same percentage as achylia. There is an occasional report indicating achylia in this condition, and in the few cases observed personally, achylia is always found. Certain clinical aspects of hook worm disease are suggestive of achylia, and it would add greatly to the value of the hook worm survey if the percentage of achylia cases were established.

In the practice of the older clinicians, acidum hydrochloric dilutum, and acidum nitro-hydrochloricum dilutum, occupied a place with the iodides and were given extensively, particularly in cases where an exact diagnosis could not be made, and also as a "tonic," especially during convalescence, and the older clinicians obtained good results. Today, therapeutics is hindered by an array of scientific facts. Unless definite proof of efficacy is offered, drugs must not be exhibited. But in spite of accumulating negative scientific evidence of the efficacy of iodides, "potash" continues to be used with good results, in many conditions not dependent on syphilis or thyroid disturbance. The same thing holds true as to hydrochloric acid and it may also have a very wide field of application.

Carlson reports that in normal digestion, there is secreted with each average meal 700 cc of gastric juice with a hydrochloric acid concentration of 5/10 per cent, or 3.5 cc of hydrochloric acid. Dilute hydrochloric acid of the pharmacopoeia is in 10 per cent concentration so it would require 35 cc of this preparation at each meal to approximate normal secretion and the administration of this amount is of course a physical impossibility. But in spite of the theoretical objection, from the patient's stand-

point, therapeutic doses of hydrochloric acid are quite sufficient.

No more brilliant results of therapy can be demonstrated than the effects of proper doses of dilute hydrochloric acid in symptom producing achylia. In the average case, pyrosis, gas, distress after eating and diarrhea—in other words, the indigestion, is almost immediately relieved by acid. Theoretically, this is difficult to explain, since therapeutic doses cannot possibly reach the concentration necessary for bacterial action. The more recent opinion of the physiologists deny the Pavlov theories of the influence of hydrochloric acid in controlling pyloric function. In spite of this, and other theoretical objections to the use of hydrochloric acid, good results are obtained. And there is no stronger therapeutic indication in medicine than the continued use of hydrochloric acid in all cases in which achylia is demonstrated by gastric analysis.

In the type of cases we have described, the administration of acid does not bring about immediate relief which is so striking in the ordinary case of symptom producing achylia, nevertheless, it should be exhibited in every case in which achlorhydria has been demonstrated. It is too much to expect here, as elsewhere restoration of degeneration as shown by leukoderma and a denuded tongue, but at the use of acid, we may hope to prevent further degeneration of this same type.

In diabetes, the problem is different. Much energy and long discussion has been spent on dietetic problems without the realization that the ideal digestive process does not exist in the individual with pancreatic insufficiency. The absence of hydrochloric acid adds a different problem to the case, but this is a factor which can easily be corrected, and with correction, the dietetic control is much easier, and the theoretical glucose content of the diet may frequently be increased greatly to the benefit of the patient. In the adenoma type of goiter the disaster is delayed so long that it is difficult to draw conclusions but on the possibility that this ultimate heart toxine is in some way dependent on achlorhydria, acid should be administered as a part of the daily routine. In hyperthyroidism, with its greatly increased metabolic rate, the secretory activity of the stomach should be carefully watched and in those periods with dimin-

1. Wright; Archives of Internal Medicine, April, 1924.
2. Felsen; Laboratory Studies in Epilepsy, Archives of Internal Med., August, 1924.
3. Eggleston; American Med. Assn. Journal, July, 1924.
4. Hurst; Lancet, F. 17, 1-111, January, 1924.

ished secretion of acid, which generally coincide with periods of regression, acid should be administered to the tolerance of the patient.

Hydrochloric acid is likewise a valuable adjunct in the treatment of heart conditions. We should not be satisfied that digitalis ineffectual without determining the condition of gastric secretion and should order hydrochloric acid with digitalis when acid is absent. The results here are not as brilliant as in fibrillation. In this condition, with its 50 per cent remarkable victories, the proof of achlorhydria and the subsequent administration of the same amount of quinidine with hydrochloric acid will turn quite a large proportion of failures into victories.

There are many interesting scientific problems in connection with this question of acid secretion and adaptation, but these problems must be worked out by the physiologists who are not yet in agreement concerning many of the main points. For the clinician remains the question of the effect of loss of acid which deserves much more intensive study but let it be said that when achylia is found in any condition, acid should be given, and the results while not comparable with the results of the administration of the active principle in our best known deficiency disease—myxedema, nevertheless, brings satisfaction to the patient and the attending physician.

TRAUMATISM OF THE HEAD AND BRAIN IN CIVIL PRACTICE*

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The purpose of this paper is to present some of the conditions, treatment and end results of trauma of the head and brain which occur in civil practice. It is unnecessary to go into classification of head injuries mentioned by war surgeons and others, as they are far too numerous.

Trauma of the brain, as of other soft tissues, is followed by increased blood supply, with consequent edema, which give rise to increased pressure of the cerebrospinal fluid. As the cranium is a closed cavity, this increase of pressure reacts on the delicate brain structure, incurring damage which will not be repaired so long as this increased pressure persists. The immediate result of a severe wound of the head—more especially a gunshot wound,—is a group

of symptoms due to a widespread disturbance of function, affecting in varying degrees the whole cerebral and bulbar mechanism. Loss of consciousness of varying depth and duration, general muscular flaccidity, and disturbance of cardiac, respiratory and vasomotor action, are amongst the most striking of these general symptoms; but their exact pathological and mechanical basis is still imperfectly understood. Whatever this basis may be, the result is a suspension or disturbance of function from which recovery can take place spontaneously (except in patients who die outright or within a few hours). This is the stage of concussion or cerebral shock, with symptoms differing in no essential respect, from those resulting from penetrating wounds of the head, and with which is associated the stage of cerebral edema. The effects of this stage may be aggravated by the presence of effused blood, which either mingles freely with the excessive cerebrospinal fluid, or becomes more or less localized or circumscribed. Experience, in a number of cases, has shown that such hemorrhages are very rarely large enough, either at once to threaten life, or to demand immediate operative interference. While the possibility of extensive bleeding must be remembered, it must not be permitted to loom too large. When hemorrhage of any consequence does occur, it is quite likely to be basal or inaccessible. It sometimes manifests itself after a duration of many hours, or even days, almost invariably giving rise to definite localized symptoms, superadded to those of the general compression. If the cerebral edema and swelling are severe, the symptoms may be relieved by lumbar puncture. Any progressive loss of function usually points to the necessity for affording free drainage of the damaged brain, as this loss may be due to a secondary inflammatory process, which may induce extension of the area with permanent damage. It is very difficult to secure efficient drainage of the damaged brain, because this tissue swells so easily in response to inflammation, while the extra room, which the cranial cavity is capable of affording, is very small in proportion to this swelling. The questions might then naturally arise, in some of these cases, is a decompression operation essential, or would lumbar puncture not answer the same purpose? We are not dealing with a permanent source of pressure like a tumor, but with a process which is self-limiting, provided the medulla

is not implicated. It is well recognized that in these conditions of cerebral contusion, the brain shows a marked tendency to absorb fluids and become edematous, and often the cerebrospinal spaces contain an excess of blood stained fluid. From observation it has become apparent that relief, sometimes, is afforded by a withdrawal of fluid. In cases of general compression, unless occasioned by progressive hemorrhage, relief by operation is not indicated, as the compression can usually be kept within bounds by repeated puncture. If loss of motion is due to shock effect, recovery will usually take place.

The following cases may very well illustrate the condition amenable to withdrawal of spinal fluid by means of puncture.

The first two cases were girls, one fourteen and one sixteen years of age. About ten days apart they were both struck by automobiles. Both were unconscious from three to four hours, and semi-conscious for twenty-four hours. There were no scalp wounds except some bruises. The neurological symptoms were nervousness, restlessness and tossing, nausea and crying, pulse rapid and weak. Twenty-four hours after the injury, a spinal puncture was done, withdrawing about thirty c. c. of fluid which was almost pure blood, expelled with much force at the beginning. The fluid was allowed to flow until it began to drip and the pressure was relieved. Each case presented about the same symptoms. X-ray revealed nothing except a small fracture of the occipital bone of the fourteen-year old girl with no displacement. A spinal puncture was done on each girl every forty-eight hours until the fluid cleared up and the pressure relieved. This required four different tappings in each case. They were both given a smart purge of calomel followed by a saline laxative. The head from the beginning was completely and continuously enveloped in ice. The patients were kept quiet in bed for six weeks, to prevent any future complications. During a period of about six months no complications have developed and both girls are attending school in the usual way. We know, however, that time enough has not elapsed to feel that they are safe from future trouble.

The third case was a child four years of age, who fell from a second-story porch, striking its head on the cement walk. The child was brought into Baylor Hospital profoundly unconscious, and remained so for twenty-four hours. He had a large hematoma on right side of head; a perpendicular fracture line could be easily made out; x-ray revealed large fracture on top of head extending perpendicular on left parietal bone, also on right parietal curving into the right orbit. There was no displacement of bone, but the fracture had a tendency to gap open. Lumbar puncture revealed the spinal fluid to be almost pure blood, which was expelled with much force. The patient was treated in the same way as the two preceding cases. The spine

was tapped every forty-eight hours until the fluid cleared up and the pressure relieved. Ice caps were applied to the head and the bowels given attention. The child was under observation for about two years; though doing well, at intervals he displayed a slight nervousness.

If the effects of cerebral contusion are confused with shock, the condition may not improve until trepanation makes possible the evacuation, from the intracranial chambers, of the clots and pulped brain, which are the occasions of pressure symptoms. For illustration, there is the so-called bursting fracture (comminuted) with widespread cerebral contusion. These cases can undoubtedly be best relieved by a properly conducted decompression. Massive fractures of the skull may occur without actual laceration of the scalp. These are the cases where withdrawal of fluid is, probably, but a temporizing measure, and gives only a brief period of relief, for the former degree of tension is regained, in a very short time, by the accumulation of fluid. In such cases it is probably better to do a subtemporal decompression combined with lumbar puncture.

This condition may be illustrated by the following cases: A boy fifteen years old was struck on the right side of the head, by a wooden float, which fell from the top of a standpipe seventy-five feet in height. A part of the parietal and temporal bones were broken away, and two or three large fragments were driven into the brain tissue, causing it to bulge into space, with a loss of a small amount of brain substance. The boy was profoundly unconscious for twenty-four hours, bleeding at the nose and right ear. The pulse was almost imperceptible. He was not accessible to a hospital and was immediately operated on in the home. Bone fragments were removed from an area of three and one-half by two and one-half inches. The dura was closed incompletely and the scalp was brought together providing for drainage. The patient recovered rapidly and in three weeks he was out of bed. The end results were good. It has been fifteen or more years since the accident. He is married and is holding a good position in a railroad office and has had no complications resulting.

The second illustrative case was a Russian Pole, a baker by trade, 29 years old. He was attacked by an assassin, struck on the head by a blunt piece of iron which fractured the left malar and temporal bones. He immediately showed marked pressure symptoms, subnormal temperature, pulse 40 per minute, respiration slow, and he was profoundly unconscious. He was bleeding at the left ear, left eye and nose. These symptoms led me to believe that I had a basal fracture with pressure to deal with. The usual half-moon incision was made over the left temporal revealing a comminuted or bursting fracture. The fractured bone was removed from a space of about two inches in di-

ameter. A line of fracture was leading down by the ear into the base of the skull and probably into the middle fossa. The dura was seen to bulge as the bone was removed. When the dura was excised a stream of bloody fluid spurted some six or eight inches high, on account of intracranial pressure. Some small clots of blood were also removed from under the dura. The pulse began to improve immediately, even while under the anesthetic. The dura was partially closed with fine catgut, carefully leaving sufficient opening for drainage. A small drain, rubber protective, was placed in the angle of the incision and the scalp closed in the usual way. Ice caps were kept continuously on the head and the patient was given the usual laxative remedies. The rubber protective drain was removed in forty-eight hours. This man was semi-conscious for about seven days; stitches were removed on the eighth; no infection occurred; patient left hospital in eighteen days, contrary to my wishes. At the present time, eight years after the accident, he is well and actively engaged in his trade as a baker.

The great danger of infection of a compound fracture of the skull is impressive, particularly when the dura underlying the fracture has been torn. Abscesses may form on the cerebral hemisphere or metastasis may occur in other parts of the central nervous system. The following case will illustrate this condition in a practical manner.

This patient's age was twenty. This young man was working in the field with an inmate of Terrell asylum, who suddenly attacked him, digging him on the head twice, with a hoe. The blade penetrating the brain, produced a bad fracture. The bones were replaced in practically normal position by another doctor, but the scalp wound became infected from the dirty hoe. In seven days the patient developed a complete paraplegia, he was then brought to Baylor Hospital where he had a thorough examination with a consultant, neurologist. He could not feel the prick from a pin, nor move a toe on either foot. We discovered some tenderness about the seventh dorsal vertebra, which we decided was a transverse myelitis or a secondary infection causing the paraplegia. Under local anesthesia the scalp wound was cleansed and drained thoroughly. The spinal canal was punctured, withdrawing three drams of clear fluid with only slight pressure. Ice was ordered to head and the tender spot on the spine, and a purgative given. The young man remained in the hospital for about ten days when he began to have a slight movement of one or two toes. He was then removed to the Terrell Sanitarium and was under the treatment of another doctor. He recovered seemingly completely in about four weeks. He is well; no complications whatever have developed and he has been accepted in the navy.

In chronic brain injuries, with depressed fractures of the vault, epilepsy may result months or even years after the injury. This is probably due, not so much to cortical adhesions, depres-

sion of the vault or foreign body spicules, but to a permanency of cerebral edema, which produces a chronic increase of intracranial pressure. The following cases may well illustrate conditions found in this group.

Case one was a boy, aged sixteen years. At six years of age he was accidentally struck on the head with an iron rod, which produced a puncture fracture, just to the right of the medium line, and in the region of the upper end of the fissure of Rolando. The exact time at which convulsions began was very indefinite, but he suffered with those seizures for six years. Then he was carried to another surgeon in a Texas city, and a small decompression operation was performed, using a transplant of a piece of fascia from the boy's thigh. The family stated that convulsions ceased entirely for eight months after the operation. The boy then began to have more severe and more frequent convulsions than formerly. He would have perhaps six or eight in one night. He would fall; his left arm and leg would become numb and contract; he would be thoroughly unconscious. He would sometimes shout aloud and curse, totally unconscious of his own behavior. These spells would last only a few minutes. When we first saw him at Baylor Hospital he presented the following symptoms: the skin was cadaverous, pale and anemic looking; he was very stupid, inactive, both mentally and physically, and wanted to sleep most of the time; the appetite was poor; temperature 100, pulse 110, respiration 24; his bowels and kidneys were normal. On examination we found a depression on the head, a little to the right of the medium line. This was the remains of the former operation. The usual half-moon flap was made in the scalp, dissecting it away from the old fascia lata transplant, which had grown firmly to the dura, and also to the convolutions of the brain; the space was very much enlarged in the skull; the old transplant was dissected away from the dura, which was enlarged by cutting away a considerable amount of dura proper. Then, a very large transplant was taken from the fascia of the thigh, with all the fat possible, and placed in position over the brain, placing the fat next to the brain. The flap was tacked with three or four stitches of catgut to hold it in position. A few strands of silkworm gut were used for drainage, which were removed in forty-eight hours. The scalp was closed in the usual way. The wound healed by first intention, and the stitches were removed on the eighth day. For eight or ten days the boy had an occasional light convulsion, these growing lighter each time until they ceased entirely. He seemed to recover rapidly, was bright and had no trouble with his hand or leg. He gained flesh rapidly. I was able to follow this case for two years. During this period no trouble recurred.

The second case was a man eighteen years old, accidentally struck on the head with an ax, which crushed the skull for a distance of about two inches. In the course of a short time he developed epilepsy, convulsions occurred irregularly, but continued through some three or four years. When he first entered the hospi-

tal we found a rather large, robust and healthy looking young man. We could not elicit a clear-cut history from the family. We made a decompression operation, finding a piece of bone pressing on the brain. This was removed and scalp closed. He was free from epilepsy for about one year, when the convulsions returned, seemingly as bad as before. In two years from his operation he returned for further treatment. A second decompression was done, which was very much larger than the first; hemorrhage was very troublesome. A fascia lata transplant was taken from the thigh, with all the fat possible, placed in position, with fat resting on the brain. The flap was tacked in position in the same manner as the previous case and the scalp closed in the usual way. Patient recovered and left the hospital after two weeks. Three years later the young man's father told me his son was perfectly well and had been so since a short time after the operation. He was performing heavy manual labor and making a living for his family.

IN CONCLUSION

First.—It has become apparent that in many cases of acute injuries of the brain, without a depressed fracture or hematoma, relief is afforded by withdrawal of fluid by lumbar puncture.

Second.—In cases of head injuries, perhaps more than any other department of surgery, it is of cardinal importance for diagnosis and treatment to be kept in close and living association with pathology. In every case it is essential, that the surgeon, before beginning the treatment, should make a determined effort to form the clearest possible picture of the actual condition within the skull of his patient.

Third.—The premise may be laid down that in any case of injury to the head, where there is a temporary unconsciousness which passes away, and subsequently returns, there is a hemorrhage, probably attended by slow accumulation. If not relieved, this finally causes death of the patient, or permanently damaging the brain, destroys his usefulness.

Fourth.—In cases with extensive injuries of the scalp and skull, with perhaps wide exposure of the brain, under proper treatment, the prognosis is always better than the extremely ugly appearance of the wound indicates.

Fifth.—A massive fracture of the skull, with or without laceration of the scalp, is best treated by a decompression operation combined with spinal puncture.

Sixth.—The ideal time for appropriate treatment of these patients having an increased intra-

cranial pressure, is immediately after the cranial injury, when the shock has subsided.

TREATMENT OF BURNS*

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The medical literature abounds in methods for treating burns locally—paraffin, alboline, vaseline, carron oil, picric acid, acetic acid, light, heat, etc., are suggested—each author claiming certain advantages for his particular method. Not enough stress, however, has been laid on the systemic treatment, which to our mind is the important factor and which in many instances will determine whether a case will terminate successfully or otherwise.

At the Cook County Hospital of Chicago, a review of one hundred consecutive burn cases shows a mortality of 30 per cent. Even allowing that the Cook County receives burn cases of a more severe character than the average hospital, still such a mortality is entirely too high.

We have often observed that small superficial burns which did not appear at all serious, show the most surprising number of fatalities. As an instance, a case entered the Mount Sinai Hospital of Chicago in October, 1923, with apparently a slight singeing of the legs and feet. Carron oil dressings were applied and the boy sent home. The patient was brought back on the same day in severe shock and died within twenty-four hours from acute nephritis and hemorrhage from the bowels; while another case with a second degree burn of almost the entire body lived for three weeks.

Too much emphasis cannot be placed on the fact that *any burn case, no matter how slight, should be considered serious*. A burn covering one-tenth of the body surface is to be considered grave in nature and a burn of one-third of the surface area alarming. If two-thirds the body surface is burned, the case is nearly always fatal. Children stand burns very poorly. A burn about the face or genitalia is more serious than a burn in other regions. The degree or depth of a burn is not as important as the area involved, possibly because a deep burn necessarily obliterates many blood vessels and lymphatics and so there is less absorption of toxic products than in a superficial burn.

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In order to scientifically treat any ailment, one must first understand the underlying pathology. Necropsies on burn cases reveal a parenchymatous nephritis, cloudy swelling of the liver, myocardial degeneration, an enlarged spleen with areas of necrosis, inflammatory changes in the duodenum with ulceration and formation of thrombi in the smaller blood-vessels. The blood picture in burn cases shows a high leucocytosis with an increase in the erythrocytes to as high as ten million. The coagulability and viscosity of the blood is greatly increased. These changes according to Drs. Dorrance and Bransfield¹ are due to three factors—toxemia, vasomotor changes and thrombosis.

That there are certain toxins released in the blood is unquestionable and has been proved by experimentation by Vaccarezza and others. The formation of small thrombi in the visceral circulation can be readily explained when we note the marked vasometer changes with fall in blood pressure. The lowered blood pressure induces a sluggish circulation. This factor and the increased coagulability and viscosity of the blood plus the introduction into the blood stream of toxic foreign materials, readily induce clotting in the small capillaries.

Death in burn cases is therefore caused by shock and by visceral degenerative changes caused by toxins and specifically by toxic parenchymatous nephritis. When one considers the cause of death, one can readily see that in the beginning the treatment of the burn locally is of very slight importance as compared to the necessity for strongly counteracting the systemic effects of such a burn.

A burned patient when first seen is usually in severe shock with a rapid pulse, dry skin, sub-normal temperature and marked fall in blood pressure. The urine is scanty, highly colored, of high specific gravity and frequently albumin is present. There is a marked increase in the red and white count of the blood. Drs. Dorrance and Bransfield (previously quoted) state that one can form a prognosis of a case by the blood picture. A white count of 50,000 and a red count of 10,000,000 means that death is near.

Patients may survive for twenty-four or forty-eight hours but they are as yet not out of danger as on the third or fourth day there is a marked

acidosis present with acetone and diacetic acid in the urine.

In the treatment of burns we follow a routine procedure. First, we quickly estimate the extent of the burn, for on the extent and severity of the burn depends the treatment to be followed. Below is printed a simple method worked out by S. G. Berkow² for estimating the percentage of body surface involved.

As soon as the extent of injury is noted, treatment is started immediately. Shock is combated by rest in bed with application of external heat. If the burn is extensive we immediately start pushing fluid by giving normal saline intravenously, the amount depending on the age and size of the patient. For a child six years old, 500 c. c. of normal saline can be given intravenously. This has a tendency to decrease the coagulability of the blood and also to decrease its viscosity. Morphine and atropine are given for pain as often as needed. As soon as shock is somewhat diminished, fluids and tap water is given per rectum. If the case is a mild one, we content ourselves with this method of giving fluids. If the burn is at all severe, we pass a duodenal tube and by this method large quantities of fluids are introduced. The tube is passed as far downward into the duodenum as possible and fluids may be given with a syringe every half hour or a Murphy drip may be connected to the duodenal tube and fluids given continuously. This method is far superior to proctoclysis as the rectum soon becomes irritated and fluids are not retained, while with the duodenal tube the amount of fluids which can be introduced is out of all proportion to that which can be given by any other method.

The advantages of giving fluids by this method are many. If the toxins excreted by the liver and thrown into the duodenum are the cause of the ulcerations of the bowel, alkaline fluids continuously flushing the duodenum will tend to dilute these toxins. The fluids also dilute the toxins in the blood to such an extent that they prove less irritating to the kidneys and other vital organs. The blood viscosity is lowered, coagulability is decreased and thrombi formation is less likely.

The importance of pushing fluids cannot be emphasized too strongly. Up till now this most important phase of the treatment has been overlooked by many physicians. A perusal of hospi-

1. Dorrance and Bransfield: *Surgical Clinics of N. A.*, Vol. 2, page 299.

2. G. S. Berkow: *Archives of Surgery*, 8:138, part 1.

tal records of one hundred burn cases shows an average consumption of only twenty-five ounces of fluids per day. If we are to overcome the toxemia, and minimize the damage done to other viscera *we must push fluids*.

The local treatment of burns is fairly well covered in the literature. Each case, however, requires individual thought and treatment. The most simple method is to use liquid alboline sprayed on three or four times daily and the burn exposed to an electric light cradle. This method is simple, avoids dressings, takes up very little time and produces satisfactory results.

Summary: Much has been written about treatment of burns but a satisfactory treatment has not yet been evolved. In view of the facts that we do know about burns, however, we urge that more attention be paid to the general systemic treatment in which the following points are of prime importance:

1. Combating shock by heat, rest, intravenous saline.
2. Combat pain by giving morphin and atropine as often as necessary.
3. Pushing fluids preferably by the duodenal tube because of the great absorption in the small intestine and because of the large quantities which can be given by this method.

We have observed very satisfactory results by the use of the method stated in this paper, and it is hoped that a general adoption of the principles mentioned will lead to a reduction in the present high mortality in burn cases.

METHOD OF ESTIMATING BODY SURFACE AREA

Considering the entire body as 100 per cent.

Lower extremities, including the buttocks.....	38%
Upper extremities	18%
Trunk, including the neck.....	38%
Head	6%

For further accuracy—the hand is one-fourth of upper extremity and arm is three-fourths. The foot is one-sixth, leg two-sixths and thigh three-sixths of lower extremity. Anterior surface of trunk is 20 per cent. Posterior surface of trunk is 18 per cent.

In children up to twelve years a modification is necessary. The trunk is 40 per cent., upper extremities 16 per cent and for the head and lower extremities one should subtract the child's age from twelve and add the remainder to the adult proportions.

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CLINICAL RAMIFICATIONS OF THROAT INFECTIONS IN CHILDREN*

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To us of the medical profession, regardless of whether we are general practitioners, surgeons, obstetricians, or any other specialist, the subject of acute throat or upper respiratory infections, ought to be of prime importance. No matter what line we practice, at some time or other we will be confronted with some of the ramifications of this infection. No one, young or old, male or female, ever escapes this infection. It is true that in many cases, especially in the well nourished adults, this infection passes over in a short time without any serious complications. Infants and children are the ones on whom the disease strikes most seriously. For the reason that infants and children are prone to have the more serious complications, my remarks will be limited to discussing this condition in infants and children.

What is meant by "upper respiratory infections?"

This condition is generally known to many of the laity as "colds," "running noses," "sore throats," and the like. To us of the profession it means an infection somewhere in the upper respiratory tract. We are, as yet, entirely at sea as to what organism this infection is due. It may be a simple influenza bacillus, staphylococcus, pneumococcus, or even a streptococcus or a mixture of any or all.

We know that these "colds" are very infectious and are transmitted on the slightest exposure. It is almost impossible to limit the infection and all who come in contact are a prey to its ravages. The most common method of spreading is by direct contact, from person to person, or the germ may lie dormant in the mucous membranes of the nose and throat and some conditions may lower the resistance of the individual and give the infecting agent a chance to spread and cause the damage. Exposure to extreme heat or cold, undernourishment, fatigue, loss of sleep, loss of appetite, are some of the predisposing causes.

In children the condition usually starts in with a "bang." An apparent healthy child will suddenly become irritable, fretful, refuse nour-

*Read before the Lee County Medical Society, Jan. 13, 1925.

ishment, and develop a temperature of 103 to 105. In obtaining the history from the parent we find that in the great majority of cases someone with a cold or upper respiratory infection has been in contact. Physical examination at this time will usually be negative, except possibly a dry red throat, not the tonsils, but the pharynx and the soft palate. The redness of the throat is so marked that one at times suspects a beginning scarlet fever. Some of these cases even have a marked erythema, making one even more suspicious of a scarlet, but the redness disappears very rapidly, there is an absence of the usual strawberry tongue and finally there is the absence of peeling.

In the majority of cases, the attack will last a couple of days and subside without causing any further disturbances. It is the complications and sequelae which we fear the most. It is difficult to offer a prognosis, because we do not know what may result. One child in the family may recover within twenty-four hours, while another child in the same household may have the most severe complications.

The two most common complications in our experience are otitis media and pneumonia. We believe that in most all severe infections of the upper respiratory tract, there is always an involvement of the middle ear. The infection extends through the eustachian tubes and causes an inflammation of the drum membrane. If the ears are examined with the otoscope, we will find a reddened ear drum. At this point, let me emphasize, most emphatically, that we should routinely, examine the ears of all children.

Most of the ear drums clear up, without causing any further trouble, but in some cases, we find abscess formations with bulging of the membrane, leading to a purulent otitis media. The complications of an otitis media, which we most fear are a mastoid involvement and a meningitis, the latter probably the most serious of an upper respiratory infection. We believe that in every ear involvement there is some meningeal irritation causing some of the symptoms of a meningitis, but this is not a true meningitis, but only a meningismus.

We have found on repeated spinal puncture in these cases that the spinal fluid was increased, but with a negative globulin and a very low cell count. These cases of meningeal irritation, as a rule need to cause no unnecessary anxiety, ex-

cept where the infection is purulent. We repeatedly see purulent meningitis, either of the pneumococcus, streptococcus or the influenza type, follow an otitis media. It is in these cases that our prognosis is grave, as our treatment is of no avail.

In all cases of meningitis we must exclude the epidemic variety, for only in this type do we have a specific remedy. Just recently a baby was admitted to the hospital with a diagnosis of an upper respiratory infection. When we first saw the child it had a very high temperature with definite bronchopneumonia signs in the chest. Over night the child developed purpuric spots on the extremities, face and abdomen. Next morning there was some rigidity of the neck with slight spasticity of the extremities. Lumbar puncture gave us an increased fluid with a cell count of seventy-five, the lymphocytes predominating. Subsequent puncture showed a purulent fluid with a gram negative intracellular diplococcus. This child although having all the symptoms of an upper respiratory infection, also had an epidemic meningitis.

Another case of unusual interest came to our notice, just recently. An infant was admitted to the hospital with a diagnosis of hydrocephalus. Lumbar punctures did not relieve the pressure so we did a subdural puncture and removed seventy-five c. c. of a straw colored fluid. This was repeated several times. In obtaining the history, we found that the child, several months previous, had an upper respiratory infection, with meningitis. From our findings we concluded that the child had a pachymeningitis, with increased intracranial pressure. Finkelstein has described many such cases.

The second serious complication is a mastoiditis. This condition is fairly frequent. We find that mastoid infections seem to run in epidemics. Some years we seem to see more cases than in other years. This may be due to the selectivity of the microorganism.

The second most frequent complication of upper respiratory infections is pneumonia, not the lobar pneumonia with marked dullness, bronchial breathing, crepitant rales, and crisis at the end of the seventh, ninth or fifth day, but rather an indefinite bronchopneumonia. We have seen very few frank cases of lobar pneumonia, during the past years, not only at the Children's Memorial Hospital, but also in private practice. When

we did diagnose a lobar pneumonia, an autopsy usually showed us our mistake. By far the greater proportion of pneumonia in children belongs to the bronchopneumonia group.

It is sometimes very difficult to demonstrate a bronchopneumonia on physical examination. We may have a child whose entire chest may be filled with fine rales, yet no dullness or bronchial breathing. In other cases we can isolate the spots with ease, giving all the cardinal symptoms of pneumonia. Autopsy on these cases does not reveal the true pathological condition which we expect in pneumonia. The lesions found are only disseminated islands of consolidation, usually most marked in the dependent portions of the lungs and around the hilus of each lung. The spots generally vary from pin head size to pea, but the solid areas are densely packed cellular masses of lung substance without distended alveoli, resembling atelectasis. Elsewhere occasional polynuclear leucocytes are present with some serous exudate. We have seen very few cases of empyema during the past few years.

Another common complication is the glandular enlargement, not only the glands of the neck, but also of the mediastinum and of the abdomen. In the majority of cases the glands are only swollen, but in some cases abscesses are formed. Probably the most distressing abscesses are those of the retropharynx.

It is a good practice in all cases where there is some difficulty in breathing and swallowing to palpate the retropharynx. In many cases we only get a boggy feeling, but in some cases, typical signs of an abscess. In the latter condition early incision will usually give marked relief. All that is necessary is to use a sharp hemostat, puncture and open the forceps. Sometimes a second incision is necessary.

As to abdominal gland enlargement, Brenne-
mann some years ago demonstrated that enlarged abdominal glands may cause acute abdominal symptoms. The presence of a fulminating type of acute upper respiratory infection, that is where the throat is very red, and associated with severe cramp-like pains in the abdomen, usually of the right quadrant and even frequently associated with muscle rigidity make the clinical differentiation between a true acute or subacute suppurative appendicitis most difficult. Far too many cases of ruptured appendices, even under the most

expert and hospital supervision, are missed entirely, as is the reverse—the diagnosis of appendicitis in the presence of an acute upper respiratory infection.

Some of the less frequent complications are sinus infection, nephritis and pyelitis. It is of interest to note that many cases of nephritis are due to a sinus infection. Recent investigation showed that in many cases of nephritis, when all other sources of infection were eliminated, a sinus which had a chronic infection was the sole cause of the nephritis, which disappeared when the sinus was cleared up.

Probably one of the earliest symptoms is vomiting. This condition is very distressing and one of the most difficult to handle. Many men consider this as a gastro-enteritis, due to an enteral infection, whereas in reality it is a parenteral infection. Any infection, in any part of the body may cause a gastro-intestinal disturbance. Some writers speak of this as a winter influenza, when in fact it is only a symptom of an infection in some part of the body. In these cases it is not advisable to institute a starvation regime. What these children need is fluid, and plenty of it. They require constant attention. If large amounts of fluids are given, they vomit, so by far the best method is to give teaspoonful doses every fifteen to thirty minutes, of an ice cold solution.

Our favorite solution is to give a teaspoonful of sodium bicarbonate and one tablespoon of Karo corn syrup in a glass of water, and then have the mother or nurse give a teaspoonful of this solution. As soon as possible we must give food. In very young children we give diluted skimmed milk, albumin milk or lactic acid milk with a 2 per cent. dextro-maltose, in small doses every two hours, while in older children we give cereals, crackers, skimmed milk and fruit juices.

In the hospital and at home, under the proper supervision we use the nasal drip. A small catheter is passed through the nose, a short distance into the esophagus, fastened with adhesive tape to the face. Using the Murphy drip, the feeding can be given over an indefinite period of time.

It is not necessary to give a cathartic as a rule, because by the time we see the child, the intestinal tract has been emptied through frequent watery stools.

In some cases where the child absolutely re-

fuses to retain any of the fluids as described above, we must give fluids by hypodermoclysis. We have used the continuous method of giving fluids under the skin, in some cases. Two needles connected with a "Y" using both breasts were employed. We find that we can give larger amount of fluids over a longer period of time, by this method, than if we attempt to give all the fluids at once.

A few words as to treatment: Very often this infection is ushered in with a convulsion. Now a convulsion in a child very often means the same thing as a chill in the adult. When the temperature in some children reach a certain height, they will have a convulsion. Most parents and some physicians treat a convulsion by immersing child in a hot mustard bath. This adds insult to injury, because instead of reducing the temperature quickly, it just increases the same. We must reduce the temperature at once, and the best method is to either give a cold pack or a cold bath. As long as the temperature is reduced there is little danger of a convulsion.

As to medication, some form of the salicylates is undoubtedly the best. We can give small doses of acid acetylsalicylic in syrup of orange at two hour intervals. As these cases are very infectious, we ought to insist on isolation, and rest in bed. Many mild cases, when allowed to romp about or crawl on the floor, will have the most severe complications. Local application, to my mind, is not very efficacious. Where there is difficulty in breathing due to nasal obstruction a 10 per cent. adrenalin in camphor water gives some relief. I do not believe that solution of the silver salts shorten the attack. In fact, any nasal instillation may cause the infection to reach the eustachian tubes. Where there is an abundant nasal secretion the suction pump gives some benefit.

I speak very strongly against the early incision of the drum membrane. I believe more harm than good is done, in incising a red membrane. As a rule, early instillation of a 5 per cent. phenol in glycerine, every hour or two, will usually abort an abscess. If there is a distinct bulging, with abscess formation, paracentesis will be of benefit.

As to the other complications, they must be treated as they arise. Give plenty of food, fresh air, stimulating with spiritus frumenti, caffeine-

sodium benzoate, camphor in oil is practically all that we can do.

In the *Illinois Health News* of October, 1924, we read the following report: "The pneumonias caused 7,392 fatalities in Illinois last year. Out of 3,153 deaths attributed to bronchopneumonia, 1,097, a little more than one third, occurred among infants less than one year of age."

"Influenza caused 2,586 deaths in Illinois last year. . . . An even three hundred deaths among infants, less than one year of age, were attributed to influenza, and an equal number among those between one and ten. This makes six hundred from these in the first decade of life."

A disease whose complications have such a high mortality ought to be of prime interest to every thinking medical man.

645 Fullerton Parkway.

LUNG ABSCESS. REPORT OF A CASE*

B. CHAPMAN, M. D.
CHICAGO

I wish to present to you a case of lung abscess that was under my observation five weeks, from October 14 to November 19, 1924. The case is interesting from the standpoint of diagnosis, etiology and treatment.

History.—Miss E. B., aged 22, office worker, was admitted to the Frances Willard Hospital on October 14, 1924. She complained of pain in the chest, cough, spitting of blood and fever. She had been sick for three weeks. In the beginning she had chills, fever and cough and was in bed for three days. She then returned to work. Ten days before admission she became sick again and this time was confined to bed. Temperature was hectic in type, with an afternoon rise. Six days after the onset blood appeared in the sputum. For the first two days there was only a trace of blood but it increased in amount during the next two days. The pain in the chest was increased by respiration and during cough. The cough was severe, recurring every five to ten minutes and disturbed her sleep at night.

The patient had had measles, diphtheria and pertussis. Tonsils were removed three or four years previously. There was one case of tuberculosis in her family with which she was in contact.

*Read before the Russian Medical Society, Chicago 1925.

She began to menstruate at 14 years, every four weeks and five to six days in duration.

Physical Examination.—On admission temperature was 104, pulse 116, and respirations 30. Her appearance was that of a very sick person. Skin was moist from perspiration. She was confined to bed.

Throat: Tonsils were removed. Teeth were in good condition. Tongue was coated.

Neck: There was an enlargement of the thyroid gland and the cervical glands were palpable.

Chest: The heart tones were rapid; there were no murmurs and the heart borders were normal.

Lungs: The respiratory movements were diminished on the right side. There was dullness in the right upper lobe anteriorly under the right clavicle, extending to the third intercostal space. Posteriorly the dullness was in the right upper, extending to the upper border of the scapula. On auscultation there was harsh breathing and fine râles in the right apex and in the middle lobe of the lung. Blood pressure was 105 Mm. Hg. systolic.

Abdomen: The abdomen was distended. The liver and spleen were not palpable.

Extremities: There was no edema of the legs and no swelling of the joints.

Nervous System: No changes were noted. The pupils reacted to light and accommodation. Patellar reflexes were normal.

Laboratory Findings.—The urine was negative for albumin, sugar and casts.

Blood examination showed hemoglobin 70 per cent.; red cells 3,400,000; white cells 26,700, of which 78 per cent. were polymorphonuclear neutrophils, 17 per cent. small lymphocytes and 5 per cent. large lymphocytes. The Wassermann was negative, as was the blood culture.

Sputum was yellowish green in color and had a fetid odor. Blood was present. It was repeatedly negative for Koch's bacillus. Microscopically many leucocytes, pneumococci and streptococci were present. The sputum was also analyzed for spirochetes (5 per cent. carbolfuchsin and Fontana's stain) and after repeated examinations I succeeded in finding them together with fusiform bacilli.

Radiographic Examination.—Three examinations were made, the first one on October 2 showing a circumscribed shadow at the hilus in the right lung. The second one showed a circum-

scribed shadow and formation of a cavity, the size of a silver dollar. The walls of the cavity were thickened. There was no evidence of fluid in the pleural cavity. The third radiogram taken on November 8 showed the shadow increased in size, the formation of two cavities and suspected fluid in the pleural cavity.

Diagnosis.—The history and the physical findings, the sudden expectoration of a great deal of sputum with a fetid odor, the septic temperature, the findings on percussion and auscultation and radiographic examination spoke for an abscess in the right lung. The same findings will occur with tuberculosis of the lung, but the absence

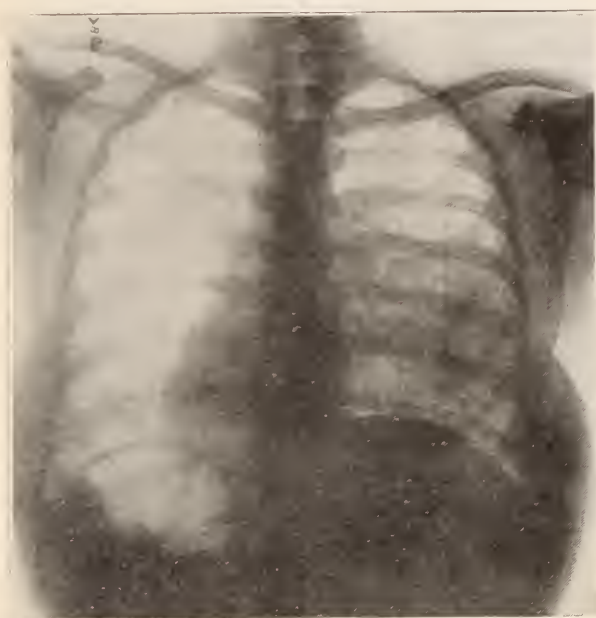


Fig. 1.—A circumscribed shadow at the hilus in the right lung. (Lung abscess.)

of tubercle bacilli in the lung and the radiographic findings (circumscribed shadows at the hilus in the right lung) spoke against tuberculosis. The possibility of pneumonia was taken into consideration, but there is no hemorrhage from the lung in pneumonia cases. However, abscess of the lung causes some inflammatory changes in the lung. The course of the disease indicated that the abscess was spreading from the upper lobe in the right lung to the middle and lower lobes in the same lung. The question of empyema was also considered. The aspiration needle was used three times for diagnostic purposes without any result and only once was found 5 c. c. of pus in the sixth intercostal space on the scapular line.

Microscopically, fusiform bacilli were found in

the aspirated pus. These findings are not sufficient to diagnose empyema in the lungs. It may be that the pus was withdrawn from the abscess itself. In general, no aspiration in the pleura should be made in lung abscess. Sometimes the aspiration is complicated by shock, cerebral embolism or empyema in the lung.

Pathogenesis.—By looking up the literature it was found that 20 to 30 per cent. of lung abscesses are complications after tonsillectomy (the swallowing of infectious material and foreign bodies). Richardson in 1912 and Bassin in 1913 had 16 cases following tonsillectomy.

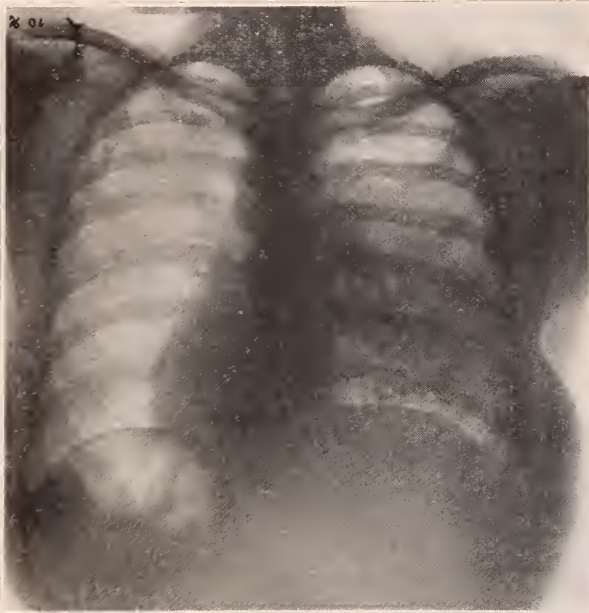


Fig. 2.—The shadow is increased in size and bronchopneumonic focus in the lower lobe of the right lung. (The process is advancing.)

Manger had 9 cases in the Mt. Sinai Hospital. Whittemore reported 32 cases, 17 after tonsillectomy. Singer-Graham published 39 cases, 29 per cent. after tonsillectomy. Moore stated that lung abscess occurs once in every 3,000 tonsillectomies. However, at the Mayo Clinic in a series of 100,000 tonsillectomies there was not a single case of lung abscess. Pilot and Davis reported 40 cases, 10 after general anesthesia, 6 after tonsillectomy, 2 after hysterectomy, 1 after appendectomy and 1 after herniotomy. W. B. Lennou from the Mayo Clinic published 84 cases of lung abscess, 34 after pneumonia, 19 after influenza and 12 after tonsillectomy.

The second cause of lung abscess is pneumonia. Nine hundred forty-eight cases of pneumonia were admitted to the Rockefeller Institute

from 1914 to 1919 and only 9 cases were complicated with lung abscess. Frankel published 1,200 pneumonia cases and found lung abscess in 2 per cent. Winner in a series of 22 cases found 22 per cent. occurring after tonsillectomy, 23 per cent. after pneumonia, 9 per cent. after appendectomy, and 4 per cent. after measles.

In the case herewith presented the abscess is a complication of a severe influenza, because the patient got out of bed and returned to work before complete recovery had occurred. The immediate cause of the lung abscess in this case was the spirochete and fusiform bacilli mixed with streptococcus infection. Pilot and Davis described in detail the pathogenesis of lung abscess and the spirochetes and fusiform bacilli as the immediate cause of necrosis in the lungs.

Normally we find spirochetes in the gums around carious teeth, also in cryptic tonsils (80 per cent.). In the nasopharynx the fusiform bacilli are found in 32 per cent. and the spirochetes in 5 per cent. of normal cases. They are gram-negative bacilli, staining with 5 per cent. carbolfuchsin and Fontana's stain, anaerobes.

Treatment.—To stop the hemorrhage from the lung the patient was put to bed and a light diet ordered. She was given hypodermically morphine $\frac{1}{8}$ of a grain and atropin $\frac{1}{150}$ of a grain. Hemostatic serum or thromboplastin hypodermically was employed. Codein $\frac{1}{4}$ of a grain was given by mouth. Locally, an ice bag was applied to the chest.

We made an attempt to cure the abscess by intravenous injections of neoarsphenamin (Pilot), as neoarsphenamin is a specific remedy for spirochetal infection. Three doses were given: 0.3 Grm; 0.45; 0.6. After the first intravenous injection the temperature dropped to normal, the patient felt better and the cough lessened. But the improvement was only temporary. After a few hours the temperature rose again to 104 degrees and the hemorrhage recurred. The same results were obtained with the second and third intravenous injections. The patient died suddenly after a severe hemorrhage.

Pilot and Davis had good results with neoarsphenamin in the treatment of lung abscess. He used it in 10 cases with satisfactory results in 7. The results depend also upon the associated infection (streptococcus hemolyticus and viridans) and whether or not there is complete or incomplete drainage. To increase the drainage

the patient should be placed in the most favorable position.

Surgical Treatment.—Some authors treated the lung abscess with artificial pneumothorax. Goldberg and Biesenthal published 3 cases treated by pneumothorax with satisfactory results. Winner used pneumothorax in 6 of his 22 cases with good results.

Contraindications against pneumothorax are adhesions of the pleura and the location of the abscess near the pleura. In this case pneumothorax was not used because of the adhesions of the pleura.

Some authors used the bronchoscope to remove foreign bodies and the pus caused by them from the lungs.

Resection of a rib was used in cases of long duration when there was no other way to drain the abscess.

I wish to express my thanks to Dr. Frederick Tice for his help in diagnosing and treating this case.

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THE EDITOR NEEDS BREAD WITH HIS SHOES ON

It is reported that one of the fastidious newly married ladies of this town kneads bread with her gloves on. This incident may be somewhat peculiar, but there are others. The editor of this paper needs bread with his shoes on; he needs bread with his shirt on; he needs bread with his pants on; and unless some of the delinquent subscribers of this "Old Rag of Freedom" pony up before long, he will need bread without a damn thing on, and Wisconsin is no Garden of Eden in the winter time.—Melrose (Wis.) Chronicle.

HAD RELATIVES IN ALL THREE PLACES

"Pass?" asked the sentry.

"Ain't got no pass."

"Countersign?"

"Countersign! Don't know nuthin' 'bout no countersign."

"Well, you can't leave camp without the countersign."

Rastus thought it over and his grievances mounted high within him. The time had come for action. With a swift motion he produced a razor from his puttee and flourished it open under the sentry's nose: "Lissen, Mistuh Sentry, Ah don't want to staht no trouble, but—Ah got a mother in heaven, a father in hell, and a gal in this yeah town, and Ah'm shuah gwine to see one of dem tonight!"—Iowa Magazine.

THE MUSINGS OF A HOSPITAL PATIENT*

"When the last examination is ended,
 When the last special test has been made;
 When the doctors and nurses have vanished,
 And every part of me X-rayed,—

"I shall rest—and Lord I shall need it,
 Lie down for an con or two,
 Till the Master of all good workmen
 Shall put me together anew.

"And don't you think I'll be happy?
 I'll sit in my old chair;
 I'll hike, and dig, and visit
 And go when I want—and where.

"And there'll be no hypodermics,
 No tablets, nor drops, nor pills,
 And there'll be no occasion for doctors
 'Cause I won't have any ills.

"And only the birds shall scold me,
 And only the breezes blame,
 When the sun rises high in the morning,
 And sets in the evening's flame.

"For Health will be mine, and the nightmare
 Of hospitals, drugs and pain
 Will be over because it is springtime
 And I will be home again!"

THE SIGN OF GOOD SOUP

Biltmore Waiter—"Want soup?"

Bill Rogers—"Is it good soup?"

Waiter—"Sure; fourteen carrot."—Exchange.

THE EDITOR ACTUALLY SMILED AT THIS ONE

"Bill," said a sailor, looking up from his writing, "do you spell 'sense' with a 'c' or with an 's'?"

"That depends," replied his friend. "Do you refer to money or brains?"

"Ah, I don't mean neither of them two," was the reply. "What I want to say is, 'I ain't seen him sense.'"

Society Proceedings

ADAMS COUNTY

September 14, 1925. This was a regular meeting of the Adams County Medical Society held at the Chamber of Commerce, the meeting being called to order at 8:30 P. M. by the president. Attendance was 24 including two guests.

The president announced that a telegram had been received today from Dr. M. F. Engham of St. Louis, who had been invited to address the Society on a Dermatological subject, to the effect that he had been

*Written by a patient in a Chicago hospital who had a long and painful illness. She wrote it to amuse her family. Physicians may enjoy reading it.

taken ill and would not be able to come. Dr. C. K. Gabriel gave an interesting case report that was discussed by the membership. Dr. C. E. Ericson was not present to give his report which had been assigned him. Dr. E. B. Montgomery assisted by Dr. Harold Swanberg presented an interesting volunteer case report on a case of "Diverticulum of the Stomach."

The secretary read the minutes of the July and August meetings and they were approved as read with the addition that Dr. Calvert was extended a vote of thanks for entertaining the Society at the July meeting. The Secretary read a letter of thanks that had been received from Mrs. Brown and Edwin Brown for the flowers that had been sent to Percy Brown's funeral. Dr. W. Williams briefly reported an interesting case of Metastatic Carcinoma that had been recently observed. Dr. Wells spoke about the desirability of the medical Society using the columns of the newspapers. The Secretary stated that he had fully investigated the Tulsa newspaper campaign and was in possession of full information to conduct a campaign in a similar manner that was conducted in Tulsa if the Society wished to do it. Dr. Wells made a motion that a committee of three be appointed by the Chair to look into the matter of advertising by the Society. The Chair appointed Drs. Wells, Koch, and Swanberg to serve on this committee.

The meeting adjourned about 9:30 P. M.

Dr. A. N. George of Boston, Mass., Prof. of Roentgenology, Tufts Medical College, will address the society on October 12th. The subject will be, "The Present Status of Gastro Intestinal Examinations by X-Ray."

HAROLD SWANBERG, M. D.,
Secretary.

GREENE COUNTY

The Greene County Medical Society met in regular session under the auspices of the Kane physicians at "Mid-City," on Friday, Sept. 11, 1925, for the program as previously announced, and the entertainment furnished by the Amoma Sunday School Class of Kane, provided by the generosity of the Kane Doctors, and a magnificent dinner of fried chicken and everything that goes with it and was nicely served by the ladies.

After partaking of this excellent dinner, the meeting was called to order by the President, Dr. Wm. H. Garrison. The minutes of the previous and last meetings were read and approved and all business appearing was deferred until the next meeting. Twenty doctors were present.

Dr. Carl E. Black of Jacksonville delivered an excellent address on the professional status of the physician, those who had acquired professional skill; he told of a visit to Pittsfield recently where memorial was held in honor of the old-time Doctor to Pike County and a marker was also dedicated on the home site of

the first physician in Pike County. The Doctor stated that the physicians would have to take up this matter themselves and see to it that those worthy of emulation by their accomplishments should be memorialized. He then discussed the cancer question, advised early operation in all cases of small tumors. Discussion by Doctors Burns, Smith, Barclay and Fenity.

Miss B. C. Keller of Chicago, Director of the Lay Education Committee of the Illinois State Medical Society, gave a very interesting address on the work being done by them for the betterment of the regular physicians of Illinois. She is a splendid speaker.

Dr. Burns, who had very recently returned from a trip around the world, requiring more than a year, gave an interesting reminiscence talk on his travels, a description of physicians and hospitals. He regarded them as great doctors, very exacting and doing great work.

Dr. Newcomb gave an interesting talk on sanitation. "Mid-City," so called, is located on the state hard road about midway between Carrollton and Kane. The grounds and the large rustic built pavilion is a beautiful place for meetings. The pavilion and grounds are nicely kept, but the wells of water are in bad condition. Water from these wells is unfit for drinking, though evidences of having been made use of, probably by campers. The censors selected Roodhouse for the next regular meeting on Friday, Dec. 11, 1925.

Drs. O. L. Edwards and F. H. Russell, censors, being absent, the president appointed Drs. A. R. Jarman and A. K. Baldwin censors pro tem. A rising vote of thanks was given the doctors of Kane for their generous hospitality, and to the young ladies of Kane for their splendid dinner and service.

On motion adjourned.

W. T. KNOX, Secretary.

ROCK ISLAND AND SCOTT COUNTIES

Through the courtesy of the board of trustees of Pine Knoll Sanitarium, the Rock Island and Scott County Medical societies held a meeting at the Sanitarium Sept. 8, 1925. A very fine program was given, and also a sumptuous dinner. Dr. Carl Henry Davis of Milwaukee, Wis., gave an address on "The Diagnosis and Treatment of Non-Malignant Diseases of the Cervix Uteri." Dr. Lewis Cole gave an address on "Gastric Ulcers," Drs. B. J. McCarthy of New York and J. F. Weber of Davenport gave interesting talks on "Clinical Observation while in Europe."

During the business session the following resolution was read and passed.

WHEREAS, The American Birth Control League is a lay organization essentially sociologic in its aims and programs, and,

WHEREAS, The American Medical Society, the Illinois State Society and the Rock Island County Medical Society have consistently opposed the bad

social judgment and the bad ethics exhibited by lay organizations entering or dictating the practice of Medicine;

THEREFORE BE IT RESOLVED, That the Rock Island County Medical Society decline to sanction the program of the Birth Control League in its establishment of local agencies of sociology practice, and,

BE IT FURTHER RESOLVED, That members of the Rock Island County Medical Society be and hereby are, instructed that affiliation in practice with the above mentioned lay organization does constitute an unethical association, and is unprofessional conduct, and,

BE IT FURTHER RESOLVED, That the New York office of the Birth Control League be informed of this action and that this action be accorded due publicity among the medical profession and elsewhere.

HENRY FOWLER, M.D.,
Secretary.

Marriages

MAURICE ALBACH to Miss Miriam Pearl Silverman, both of Chicago, August 16.

WILLIAM CHARLES BUCHBINDER, Chicago, to Miss Louise May Woolf of Highland Park, Ill., July 18.

JOHN F. RUNNELS, Chicago, to Mrs. Emma Armstrong of Fort Wayne, Ind., recently.

Personals

Dr. Ira Johnson has been appointed county physician of Lawrence County.

Dr. Duke R. Gaskins, Harrisburg, has been appointed chief surgeon and manager of the Union Hospital, West Frankfort.

Dr. James E. Bellinger, Collinsville, addressed the Madison County Medical Society, Edwardsville, September 2, on "Medicine in the Orient."

Alden B. Dawson, Ph. D., associate professor of anatomy, resigned his position with Loyola University School of Medicine to accept an appointment as associate professor of biology, New York University, New York.

Dr. Paul E. Greenleaf has been appointed district surgeon for the Illinois Central Railroad at Bloomington, to succeed the late Dr. Franklin C. Vandervort.

Dr. Charles Harold Sihler has been appointed county physician for North and South Litchfield; Dr. Charles H. Lockhart, county physician for Witt; Dr. William O. Fish for the village of Fillmore; Dr. Edmund T. Douglas, Hillsboro, for Hillsboro Township, Schram City and the

county farm; Dr. Jesse M. Hoyt, Nokomis, for Winona, Coalton and Nokomis, and Dr. Robert N. Canaday for Rountree and Irving townships.

News Notes

—The Alton County Medical Society held its annual dinner, August 16, at the Rock Springs Country Club.

—It is reported that Dr. Louis H. Hayes, Alton, pleaded guilty, September 9, to violation of the Harrison Narcotic Law and was sentenced by Judge Fitzhenry at Quincy to five years in the penitentiary and to pay a fine of \$2,000.

—Five motor caravans, each with a medical and technical staff, left Springfield recently on a tour of instruction in public health to be given at the leading county fairs. Each unit is equipped with motion pictures and exhibits and prepared to perform physical examinations and medical tests.

—The annual dinner of the Chicago Medical Society will be at the LaSalle Hotel, 6:30 p. m. October 14, when the new officers will be installed. Dr. William Allen Pusey, former president of the American Medical Association, will act as toastmaster. The dinner will be informal (\$3 per plate). Dr. Emmet Keating is chairman of the committee on arrangements.

—The Odontographic Society of Chicago announces a debate, October 12, in which Weston A. Price, D. D. S., Cleveland, will present the affirmative, and John P. Buckley, D. D. S., Los Angeles, the negative side of the subject: "Resolved, That Practically All Infested Pulpless Teeth Should Be Removed." The debate will be in the Grand Ball Room, LaSalle Hotel, at 8 o'clock; there will be a dinner at 6 o'clock, to which members of the medical and dental professions are invited. Two dollars per plate.

—At a meeting of the council of the Illinois State Medical Society in Chicago, September 9, resolutions were adopted calling for the appointment of a commission of experts, to be paid by the state, to sit in cases in court in which the plea of insanity is made. A committee comprising Drs. Jacob C. Krafft, Chicago; Harold M. Camp, Monmouth, and John R. Neal, Springfield, was appointed to study the question of "insanity defense," to confer with the Illinois and Chicago bar associations and the American

Institute of Criminology, and to make a report. The council considered, it is reported, that the employment of psychiatrists and experts in criminal cases should be taken out of the hand of both the state and the defendants.

—Surgeon General Hugh S. Cumming, Washington, D. C., has detailed Dr. Oswald E. Denny, Chief Medical Officer, United States Public Health Service, U. S. Marine Hospital No. 66, National Leptosarium, Carville, Louisiana, formerly in charge of the Cullen Leper Colony, Cullen, Philippine Islands, to come to Chicago on November 18 next, and, in collaboration with Dr. John Ritter, clinical instructor and lecturer on tuberculosis at Rush Medical College, to present at the Joint Meeting of the Chicago Medical Society with the Chicago Tuberculosis Society a joint paper on the "Noticeable Parallelism and Similarity Between the Two Chronic Diseases, Leprosy and Tuberculosis," and an extended lantern slide demonstration, illustrating leprosy from its incipency to the far advanced stages.

—Scholarships on the Oliver-Rea Foundation for graduate study in Medicine are available at the New York Post Graduate Medical School and Hospital. Inquiries should be addressed to the Dean, 301 East Twentieth Street, New York City.

—Dr. A. C. Ivy has been appointed Professor of Physiology and Chairman of the Division of Physiology and Pharmacology in Northwestern University Medical School. Dr. Carl Dragstedt has been elected Professor of Pharmacology in Northwestern University Medical School. The following promotions have been made in the faculty of Northwestern University Medical School: Drs. Newell C. Gilbert and William H. Holmes have been made Associate Professors, and Martin R. Chase, Walter H. Nadler, Lawrence H. Mayers and Leon Unger, Assistant Professors, of Medicine. Dr. Loyal E. Davis has been promoted to the rank of Association Professor of Surgery and has been made Director of the Department of Surgical Research and Chief of the Department of Neuro-surgery. Drs. Jacob R. Buchbinder, Sumner L. Koch, Paul B. Magnuson and Victor L. Schragar have been made Assistant Professors of Surgery; and Drs. Carl F. Bookwalter and Ellison L. Ross, Assistant Professors of Otology.

Deaths

STEPHEN S. BARAT, Chicago; College of Medicine and Surgery, Chicago, 1903; medical director, Public Life Insurance Company; aged 58, died, September 15, of cerebral hemorrhage.

CASSIDY CHENOWETH, Decatur, Ill.; Rush Medical College, Chicago, 1869; aged 77; died, August 22, at the Decatur and Macon County Hospital, of carcinoma of the throat.

WALTER AMAZIA DOMER, Wabash, Ind.; University of Illinois College of Medicine, Chicago, 1901; member of the Indiana State Medical Association; aged 52; died in August, at a sanatorium in Indianapolis.

FRANCIS MARION FOWLER, Elizabethtown, Ill.; Vanderbilt University Medical Department, Nashville, Tenn., 1896; aged 66; died, July 8, at a sanatorium in Memphis, Tenn., of angina pectoris.

RAYMOND REGAN HARRINGTON, Chicago; Northwestern University Medical School, Chicago, 1912; member of the Chicago Ophthalmological Society; aged 35; died, August 5, of chronic nephritis and edema of the lungs.

CHARLES PAUL SAMPSELL, Evanston, Ill.; Jefferson Medical College of Philadelphia, 1888; aged 68; died, August 20, of chronic nephritis and heart disease.

GEORGE M. TYRRELL, Freeport, Ill.; College of Physicians and Surgeons, Keokuk, 1888; member of the Illinois State Medical Society; aged 63; died, August 26, of heart disease.

FRANKLIN CADY VANDERVORT, Bloomington, Ill.; Rush Medical College, Chicago, 1881; for three years president of the McLean County Medical Society; formerly county physician and city health officer; member and at one time president of the board of education; aged 67; died, August 29, as a result of a streptococcus infection.

JAMES HAMILTON WALKER, Effingham, Ill.; Barnes Medical College, St. Louis, 1896; aged 59; died suddenly, in August, of heart disease.

CHARLES O. WATSON, Smithfield, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1897; member of the Illinois State Medical Society; aged 55; died, September 2.

JOHN EDWIN RHODES, professor emeritus of laryngology and otology at Rush Medical College, died at his home in Chicago, September 2, aged 74, of angina pectoris and pernicious anemia. Dr. Rhodes graduated from the old University of Chicago in 1876, and for a time engaged in business in California. He then took up the study of medicine, graduating at Rush Medical College in 1886, and almost at once became connected with the faculty. He was for many years professor of otology and laryngology and college historian, collaborating with the late Dr. Norman Bridge in writing a history of Rush Medical College. He was formerly on the staffs of the Presbyterian, St. Mary's and Nazareth hospitals, and the Home for Destitute Crippled, and was a member of many special otolaryngologic societies.

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Membership correspondence to Dr. Harold M. Camp, Monmouth, Ill.

Society proceedings and news items and changes in the mailing list to Dr. Henry G. Ohls, Managing Editor, 7626 Bosworth Avenue, Chicago.

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Editorial

CHICAGO THE MEDICAL CENTER OF THE WORLD

Chicago Medical Society has the opportunity of a lifetime at hand. If taken by the proverbial forelock the city can be made the medical center of the world.

Work qualifying the city and its environs for this distinction is performed hourly all about us. Neglect to let others know of our capacities and performances will result in Chicago's slipping into a mere sub-station for outlying physicians to come for post graduate labors. Instead of being the medical center of the world, Chicago will soon cease to be even a rival for this supremacy in the United States, unless some action is taken.

The Chicago Medical Society should assume the responsibility of cooperation and organization between the profession, the schools and hospitals and affiliated institutions to the end that the choate unit will be a forceful lever to bring about the "rendering unto Caesar of the things that are Caesar's."

Chicago should be the logical city for visiting physicians to come for supplemental study. The population is large. The city is beautiful.

There are four large medical schools with a wonderfully competent and efficient teaching staff. Here are all the ingredients. What is needed is the mortar and pestle to mix them.

Is it not possible that through the offices of our Society we can receive notices of all clinics, and of all work that is being done in the colleges, in the hospitals and private clinics, and bulletin same, not only to visiting physicians but to our own members? Why should not the Chicago Medical Society advertise in the American Medical Association Journal that visiting physicians are welcome from any part of the country; that the Chicago Medical Society will assist them in post graduate work?

Cooperation from the institutions and the

individuals, if organized and distributed properly, will go far towards placing Chicago at the head as a teaching center.

Another progressive step would be the organization by the Chicago Medical Society of the professional labor done in Chicago so that our own members would have opened to them diagnostic and treatment clinics as well as especial clinics. In this way our own membership will make themselves more efficient physicians and surgeons.

This when analyzed would appear to be indubitably the inevitable and only way in which to overcome the propaganda of various cults and isms, and the so-called practitioners of bloodless surgery and medicine.

Along with post graduated work there would run a bi-monthly diagnostic clinic held on the south, the west and the north sides of Chicago under the auspices of the Chicago Medical Society. Our members would gain greatly therefrom.

These views are expressed for the purpose of creating discussion with the possibility in view that good may arise therefrom. Will those who are interested in the idea please place themselves on record by comment either favorable or otherwise?

It rests with Chicago to put this great undertaking where it belongs on a plane of established success that will make Chicago a medical center of admiration for the whole world.

PRE-SCHOOL CHILD EXAMINATION

The accompanying insert shows the pre-school child examination card which will be supplied free to every member of the Illinois State Medical Society upon application to the Lay Education Committee, 58 East Washington Street, Chicago.

These cards have been purposely reduced to their simplest terms and have been printed for the purpose of a state-wide examination by the State Department of Health.

According to the plan of the campaign, every club woman of the 70,000 members of the Illinois Federation of Women's Clubs is urged to accept the personal responsibility of one child—her own, her neighbor's, or her employe's—to see to it that this child is given a complete medical and dental examination by the family physician

and dentist and that defects indicated are followed up and removed.

The emphasis in the campaign is on its educational aspects. The important thing is to get this child, of the age medical men agree is most neglected, to the family physician. The card is then to be forwarded for statistical findings to the Lay Education Committee, though the physician, of course, will make any copies necessary for his own history record, and the mother is to be given a statement on the physician's prescription blank to this effect:

"Your child is normal except for.....
I recommend"

After statistics have been gathered, the original card will be returned to the mother through her club organization.

This campaign can be made a great step forward in keeping the whole family in touch with the family physician and in teaching the idea of the periodical health examination for the adult, also. It is not to be confused with a charity clinic. As each club woman reports that she has discharged her personal responsibility, she reports the names and addresses of children whom she believes should have this examination on a charity basis because they are already a public charge for some other of the necessities of life—food, clothing, fuel, shelter, etc.

All arrangements for such charity work will be handled under the direction and by the approval of the county medical society, from which the reports come, and will not be attempted until the educational phase of the work is completed.

From reports through various parts of the state, it is believed that much interest will be shown in this work and much good accomplished.

It will be of interest to the Illinois State Medical Society to know that a physician from southern Illinois has offered a prize of \$500 in cash, to be awarded to that club of the Federation which, in the judgment of a committee to be appointed by the President of the Federation and the President of the State Medical Society, has done the most efficient work for the pre-school child examination in proportion to its membership.

The award will be made in the name of the Illinois State Medical Society and the name of the physician will not be used.

DEPARTMENT STORE PRACTICE OF MEDICINE

PROUD OF THE FACT THAT THEY CAN SUCCESSFULLY COMPETE WITH PRIVATE DOCTORS

THREE YEARS OF THE CORNELL PAY CLINIC

California and Western Medicine, October 1925 issue, takes to task the report of the Cornell Pay Clinic covering a period of three years. The editorial is so timely and complete that we reproduce it. We read:

The Cornell Pay Clinic, says its recent report, "has proved a successful demonstration of the possibility of providing good medical service on a self-supporting basis for persons of moderate means. Since these persons constitute the majority of the population, the Cornell Clinic announces itself as 'a demonstration of considerable public importance.'"

The most amazing feature of the expensive report gotten out by these promoters of department-store practice of medicine is that they are apparently proud of the fact that they can successfully compete with private doctors with the "majority of the population."

Their report announces with apparent gusto that, whereas other pay clinics, some of which are enumerated, do serve some poor people free, the Cornell Clinic absolutely refuses charity because it was feared the Clinic would be "swamped by non-paying patients" unless service was "limited to those who could pay its fees." *In other words, this clinic is in the practice of medicine for fees precisely as are private physicians.* They are so cold-blooded about it that they refuse any help to the poor "except in emergencies" and for purposes of "medical education and research." This, of course, gives them a tremendous advantage over the private physician who considers it his duty—and privilege—to render a large amount of free service. It even gives this corporation form of medicine advantages over the Mayo Clinic, the clinic in connection with the Ford Hospital and others they mention, in that all of these do some free work. Cornell claims a large volume of business, with an average of 18,000 new patients a year. The report shows 118,711 visits during 1922, 110,235 during 1923, and 114,705 for 1924. These, according to the report, represent about 90 per

cent of those who apply for service; *the other 10 per cent are refused because of inability to pay the fees.* There is another 10 per cent who, although of doubtful financial standing, are accepted.

A Promising Business Venture—Although only in its fourth year of business, this clinic has grown financially from a deficit of \$46,000 in 1921 to a self-sustaining basis in 1924, and the indications are for a substantial profit for 1925, unless some of the usual business methods of preventing such showings of profits are utilized. This is an encouraging showing, from a commercial standpoint. It is said to have taken Mr. Gary longer than this to make United States Steel a paying proposition.

Fees—The report gives the average fees paid by patients as \$2.24 a visit. As an *average*, such fees ought to make the practice of medicine very profitable, particularly when it is remembered that they render no free service. Less than 20 per cent of the doctors of California—and we suspect of New York as well—*average* as much as \$2.24 a visit in the practice of their profession. But, of course, they all do free work, and most of them a large amount of it, which naturally pulls *their* average down.

Substituting salaries for fees to physicians gives corporation practice of medicine another advantage in their competition with the private fee basis of pay usually employed by the physician who practices as an individual. The Cornell Clinic report shows that they paid \$90,770 as medical salaries last year. When this is considered in connection with the 114,705 patient visits, we see that they paid their doctors the bargain-counter figure of seventy-eight and a fraction cents a patient visit. Mind you, these were no "let me see your tongue" visits. Some 10 per cent. of them were first visits, with a "thorough physical examination" which required "nearly three-quarters of an hour of the doctor's time," while the others were revisits requiring "ten or fifteen minutes" of the doctor's time. The report shows that the Clinic paid "non-medical salaries" equivalent to well over a dollar per patient visit. Compare that with the 78-cent doctor's fee, and draw your own conclusions. The report's apology for the "flat fee," like all similar apologies, whether emanating from a Detroit

hospital, a labor union, or a government bureau, makes illuminating reading.

The various clinic "chiefs" are paid a "flat salary" of \$1,500 a year, which, according to the report, is for from 268 to 360 hours of their time—at most, \$5 per hour. Other doctor employees are divided into two groups—one class is paid \$2 an hour, and the other \$2.50 an hour. They work in clinic "sessions" of two and one-half hours each, and if the doctor finishes his work in two hours he is permitted to take the other thirty minutes off, presumably on full pay. The Clinic attempts to provide these doctors working for wages all the clerical and technical help they can use, but, says the report, "where the physician is supposed to be giving his time in hospital or clinic without remuneration . . . he can be clerk as well as doctor," because this combination "saves the institution money."

In answering the question of who are their patients, the report says the average wage of the patients is \$1,800 a year, and that the wage-earners average "somewhat" more than one per family. The report quotes the figures of the Housing Commission of New York, to the effect that two-thirds of the families of the city have incomes under \$2,500 per year. Therefore, says the report, "*Potential Cornell Clinic patients represent a majority of the population of the city.*" If this dream should come true before the inevitable awakening occurs, there would be left to the some 15,000 doctors—many of them Cornell graduates—a clientele of a minority of the people of the city, and *all* of the poor would be in this minority because the Cornell Clinic refuses to serve them, so the personal doctor must do so, as he always has done. Interesting, isn't it? That interest will be intensified by the well-bolstered statement of the Clinic that many of their patients "have had previous medical care without satisfactory results before coming to Cornell." We wonder if the Cornell service is so superior that their shoe might not fit the other foot with equal certainty. The report certainly indicates strongly enough what the Cornell Clinic promoters think of themselves, as compared with their own graduates with whom they are competing, when they say in effect that the great popularity of the Clinic is due to "previous unsatisfactory experiences" of their patients and to the "prominence" of the Clinic

doctors, who are "leading members of the medical profession." Considerable space in the report under review is occupied in explaining, by invidious comparisons, how and why the services of the Cornell Clinic "indicate a much higher level of medical efficiency" than do similar figures from other clinics. Some ingenious philosophy and some queer figures are used to support this conclusion, which some readers will extend to a logical conclusion of interesting if not entertaining portent.

To make the claim that because many patients are added to the Clinic's happy clientele because of dissatisfaction with their former doctors is indicative of the Clinic's superior service, is likely to have another side. Surely, there must be some patients—and we suspect there are many—who also became dissatisfied with the Clinic and took their patronage to a clinic competitor. Of course, the ethical doctor works at a disadvantage in this phase of competition because his idea of service does not extend to follow-up letters and personal solicitation to return by paid agents or solicitors of any kind. His contractual relations with his patient are purely personal and wholly voluntary at every stage of the contract.

The authors of this ingenious report appear to get considerable satisfaction out of invidious comparisons of the costs of service to the patient between what they are pleased to term the "commercial rates" of private doctors and their department-store prices. This part of the report reads much like advertisements published for the purpose of increasing trade, and closes with this: "From the financial standpoint, there is no question that the Cornell Clinic is offering a grade of medical service which would be far more expensive to its patients in private offices" . . . and "the family incomes of the Cornell patients are typical of the majority of the families of New York City."

Careful reading of this report of the Cornell Clinic, only a few outstanding features of which have been noted here, leaves the thoughtful reader with a variety of feelings. One is in wonder as to how many of the fifty odd thousand patients who visited the Clinic needed hospital care, including surgical work; what hospitals and what doctors were they sent to? Why? What were the expenses and who paid the bills?

The chances for referred work from a large clinic that does no free work and claims the majority of citizens of New York as its legitimate customers ought to be exceedingly great.

The House of Delegates of the American Medical Association has twice disapproved as unnecessary and inadvisable, movements which appear to offer only part of what this clinic offers under similar principles and tending in the same obvious direction.

Are department-store methods and corporation practice of medicine to replace the personal service of the doctor to the patient who chooses him? We wonder. If the policies and practices of the Cornell Clinic are sound, then many other varieties of big business medicine are sound and in the best interests of the public health. None of these activities can be considered to be local. Attempts to start Cornell Clinics have already been seen in California and presumably elsewhere. If the Cornell Clinic is the best method of caring for thousands of pay patients of New York City annually, then the principle should be extended to all classes of people throughout the country. If it is unsound, unwholesome and unwise, then physicians should say so now, and say so in no unmistakable terms.

THE SEA OF MY DILEMMA IS THE SOCIALIZATION OF MEDICINE. THIS YOU WILL NOT HAVE; THEN, YOU MUST TAKE THE DEVIL—THE SOCIALIZATION OF WEALTH

OMNIPOTENT NATURE PREVENTS PROFESSIONAL FROM SOCIALIZING HEALTH; KEEN WITTED PHYSICIANS PROTEST THE SOCIALIZATION OF MEDICINE, HENCE EDUCATORS HIRED BY CAPITAL DEMAND SOCIALIZATION OF WEALTH

To hear a doctrine calling for the socialization of all wealth emanate from the great American University that from genesis to exodus is built upon the essence of capitalization, impels one to reach for a volume of "King Lear."

Truly, "How sharper than a serpent's tooth 'tis to have a thankless child."

When the subsidiary phrase is mouthed to the effect that "since health cannot be socialized, wealth must," the dictionary of quotations again comes in handy. This time with the comment, "Needs must when the devil drives."

Few outside of the cognoscenti,—and to be honest, only a few of that learned group,—realize

just what is going on out at the luxuriously equipped institution known as "The Midway University." A hotbed of theorists, spawning anarchy in the name of the search for truth, and frenzy in the mask of reason, spurning any gods save those of their own fashioning, what a mockery, what a nose-thumbing, is thus created against the mild old gentleman who for so long has been "the hand that feeds" to this assemblage of much brain and little balance!

John D. Rockefeller, founder and head of the Standard Oil company, made possible this great western center of learning. It is almost a simon-pure Rockefeller concern. Now Mr. Rockefeller from all accounts, is, as an individual, a level-headed, simplicity adoring, systematic, order-loving and religious, old gentleman. He has lived long enough in this vale of unrest to know that a thing is not necessarily excellent just because it is new, surfacey speaking, or absolutely bad because it is old.

After all, there is little new on earth. Rather do we live in a sequence of revivals, based upon the survival of the fittest. To quote again, hark back to Goethe, "There are so few voices and so many echoes."

No matter how raucous an echo may be it is only in untoward and unfrequent instances that the coarse vibrations of a reverberating echo destroy the vessel in which the echo rings.

Casual prophecy as to matters out at the University of Chicago,—and that excusably enough,—is that this exception is about to preempt itself into proving a rule right out on the steam-heated sidewalks of the famous Quadrangle.

For almost a quarter of a century, the University of Chicago, to a large extent, has set out to prove that everything that is, was or is wrong and that nothing in the heavens or on the earth or in the waters upon the earth is what it seems to be.

To this end the dream-book sociologists and allied artists embrace revolutionary doctrine after revolutionary doctrine. Among others have been espousal of socialistic schemes so absurd to the balanced mind as to be considered impossible of implantation in a free American state.

In the beginning, there was a great Prussian influence at the Midway school. That was when Germany throughout the civilized world stood for law and order. That was before Germany

prostituted that great asset of any nation, the medical profession, into its decay and retardation through obnoxious state medicine.

For John D. Rockefeller loves system. Order and system have made possible the gigantic Standard Oil. So German influence and "hands across the sea" were persona grata!

So far as Mr. Rockefeller is concerned, and other such rational donors to the University as the Swifts, Ryersons, Hutchinsons, Mandels, and Cranes, it is impossible to believe that they are aware of some of the doctrines uttered at the University by the men and women on their payroll. Does John D. Rockefeller know that within the past few months one of his "paid help" has flouted religion and denied a God beyond that pagan deity of health? Does he know that another says that "efforts to save the American home are misdirected; that it has served its day and its influence is not needed any more?"

Does John D. Rockefeller, fighting to save the standards of the American home in some branches of his own family, subscribe to that doctrine? Hardly would it seem so. And is he for the socialization of medicine even in such sugar coated fashion as one of his servants in the vineyard of the mind would appear to inculcate?

At the annual meeting of the Chicago Medical Society, Oct. 14, 1925, Prof. T. V. Smith of the University of Chicago in a paper "Ethics and Health," announces vaguely and with great blandness that since health can't be socialized wealth should. To the man up a tree it looks as if what most of the reformers want is merely the *job* of reforming rather than its objectives. Something to socialize! Nature and its processes, revolting from man made direction, then the busy bees of the red-flagged hives must needs content themselves with the institutions man has built as a bulwark between himself and nature. The system is similar to getting on the far end of the limb as you saw it from the tree.

Mr. Smith may not have meant to place himself in that position, nor his University, either. Citations from his paper would seem to clinch the statement that he has achieved both ends. Among other Smithisms to this great result one may cite:

"Misdemeanors and crimes are gradually but surely becoming illnesses and diseases; and this

is law transformed into a science, and savage punishment for vindictiveness into civilized treatment for human amelioration. *Ethics ceases to be an esthetic means to an esoteric good, and stands forth as a quest for full living in the ways of health.* The same metamorphosis has furnished religion a norm of healthy-mindedness by which it may purge, and actually is purging itself at last from the authority of sick souls—from anemic Jesuses, from psychopathic Pauls, from epileptic Peters.

"All this is to say that you doctors have furnished us not only with greatly improved health but you have made dominant in the thought of the day the ideal of health. . . The rise of psychiatry among you . . . heartens intelligent laymen to believe that you will grow with your triumphs until you take the whole field of life for health. . .

"Health is so democratic a conception that it almost compels democratic practice. *One may acquiesce in the giving of wealth and luxuries to the very few . . . even in the United States two per cent. of our people own more than sixty per cent. of our wealth. But who could with composure think of the same aristocratic distribution of health, two per cent. supremely well and ninety-eight per cent. sickly?*

" . . . As medicine works more and more to make health democratically available it willy-nilly throws its influence solidly towards the democratization of both industry and education.

"*In the long run we shall demand in the name of health that nobody shall be really poor as long as anybody is actually rich. . . The socialization of medicine? This you will not have? Then you must have the socialization of wealth.*"

There are veiled euphemisms in Prof. Smith's demands but those who are accustomed to taking the aloe out from the sugar coat of socialistic pills can taste plainly Mr. Smith's unpalatable invitation to chaos through the socialization of wealth. Russia stands as a red light on the path to prostitution of what is finest and best in the moral code as evidenced through centuries of experiment. The socialization of wealth will come about most nearly, if ever, through the socialization of human nature. This does not mean a leveling of the high places but an elevation of the morasses. It cannot come with jus-

tie and equity until the "leaners" became at least half-way "lifters." It seems too much to expect, short of the millennium, that all men shall be standardized in mortal life, even though in the "sight of God they are free and equal." Just how this equalization stacks from a pagan viewpoint provokes quizzical comment. It will be remembered that the Spartans left their aged, their infirm, their weak and also their deformed babies on the hillsides to die. Rather strenuous socialism. Mr. Smith and his confreres would tear down the existing structure of civilization, a faulty mosaic, to be sure, yet one put together with infinite pains and a mosaic in which the man who labors has some return for his labor. Where incentive, the biggest mortal mainspring the world knows, spurs the individual to self-exertion. Remove this incentive by making it possible for the man who will not work and who refuses to learn how to work to fatten on the labor of those who do work and view the result. Compulsory labor at the behest of the state, even in rotation of trade is not a success.

No man can shine in every profession. The adage "Jack-at-all-trades, and good at none" should be elucidated to those socialists who fancy every man can do his brother's trade as well as his own. The most rabid capitalists are bred from the ranks of trades unionism. Let a man once experience the joy of acquisition and, so far back as human experience traces, his tendency is not towards altruism but rather towards ego-ism. Socialization of wealth can not permanently come about through any system other than that by which aggrandizement of wealth has been made possible. That is, by the law of competition and personal effort.

There will be mistakes and injustices, of course. Even nature produces blemished fruit. But because the pear crop fails from a few of the trees of the orchard, does the wise horticulturist plow up the countryside, devastate his wheat field as well as his orchards and also his neighbor's strawberry patch? He does not!

Mr. Smith, like all theorists, is blind to the duality of life and the balance of the harmonies. "So God created man in his own image, in the image of God created he him; male and female created he them." If one refuses this glory to God, then let the onus rest on nature, which is bi-sexual, diverse and variant to the lowest form of created and existent thing.

ABOLISHMENT OF HOME AND TRANSFER TO STATE OF CHILD REARING ADVOCATED BY WOMAN PSYCHOLOGIST AT UNIVERSITY OF CHICAGO

DR. MARGARET DANIELS OF THE UNIVERSITY OF CHICAGO HASHES UP FOR AMERICAN WOMEN ROUSSEAU'S RENAISSANCE THEORY ABOUT HOMES AND BABIES: "BREED AND DISCARD," THE NEW SLOGAN.

Below is printed an editorial from the *De-troit Free Press* of June 8, 1925, reporting the speech made by Dr. Margaret Daniels of the University of Chicago before the midwest conference of the National Woman's party.

Of course Dr. Daniels merely presents in the vernacular, with a great many flash-in-the-pan comments, that old and selfish doctrine of Jean Jacques Rousseau:

"The parent should produce the child, the state rear it."

Unfortunately in a democracy each citizen is in the condition of that king of France who remarked:

"L'etat? L'etat? L'etat est moi!"

Every voter, active or potential, has a right to repeat, "The state? The state? I am the state." Unfortunately this fact is lost sight of by reformers, both when they wish to secure "Federal aid" or "Federal relief." The individual who seeks federal relief, seeks help from himself. The state has only what the taxpayers pay into it; produces only what its populace wrings from soil and industry and natural resources. For this sort of fairy godmotherhood one is moved to repeat the woman's definition of Christian science which ran to the effect:

"After watching what Christian science does to my relatives I am sure that the doctrines of Mrs. Eddy afford an excellent excuse for not doing what you should but don't want to, and for doing everything that you want to do and shouldn't."

Do the sponsors of the University of Chicago as individuals and as citizens of the United States subscribe to Professor Daniels' doctrines? Or have they any idea what she talks about any more than she has herself? As for "vibrant women"—that's a new name for the results of the doctor's doctrines—the profession employing those methods really was followed by women long before they ever had their pretty white

hands on the ballot box. A pekingese, of course, is far preferable to a child in the minds of many well-kept, well-fed theorists and parlor revolutionaries.

The following is the quotation from the *De-troit Free Press*:

DR. DANIELS' "VIBRANT WOMAN"

In the very middle of the hot spell, when, as a professor of psychology, she should have been alert to the necessity for keeping a close check on her fervid imagination, Dr. Margaret Daniels journeyed here from the University of Chicago to inform the midwestern conference of the "National Woman's party" that efforts to save the American home are misdirected, that it has served its day, and its influence is not needed any more.

The fact that "so many middle class women are content to live protected in the home is one of the greatest obstacles to women's progress," the doctor announced, and thereafter provided the public with an enlightening sample of the stuff she dishes up to her pupils by expressing the pious hope that "we may be able to educate a race of girls to whom the idea of marriage is only incidental."

Some people might gather from this remark that Margaret advocates free love. We content ourselves with quoting her assertion that "the dreadful finality of marriage as now constituted is what is keeping women back, intellectually and spiritually. In the future, they will think only of mating, not of marrying."

In view of the divorce record for the country, it may be rather hard to keep a straight face and read Dr. Daniels' condemnation of the holy estate of matrimony—which she evidently does not consider at all holy—because it is too final.

But control yourself and read what the doctor thinks the advanced woman of the future is to be. This happy being is not going to spend most of her time adorning herself to please men. She won't have to. "The new woman will think more of spiritual beauty. She will be a vibrant being, so full of energy and imagination that she will attract men without trying to. With her, home life will be only incidental, her career, her work will be the first interest."

All of us have met or seen female beings so full of energy and imagination that they "attract men without (apparently) trying to," and have no time for the performance of domestic duties. Many a "middle class" wife with a philandering husband knows of one or more. They abound in the ranks of that big army of co-respondents which today is nobly pioneering in the effort to eliminate the worn out American home. They certainly are vibrant; and we suppose they must be spiritual, else they would not continually talk about soul mating. But we are afraid there isn't much "new" about the breed. They are as old as the eternal triangle.

However, whether new or old, these advanced members of the sex will not fail to hail joyfully one

feature of Dr. Daniels' beneficent program because it is designed to remove a social condition which at present badly cramps their style.

The doctor says that in the coming era parents will not be bothered with the care of offspring. The state will look after them, leaving men and women free to pursue their "careers," and, we suppose, each other.

As everybody knows, nowadays when one of the emancipated vibrant beings has a child, quite by accident, she either ceases to be vibrant or she tries to get rid of her encumbrance. Consequently the "baby farms," the orphanages and the boarding schools are crowded with waifs. If there were some way of turning all the "little consequences" over to the state automatically, that would be heaven for the vibrant mother. The fact that it might be hell for the child wouldn't count.

Here we refrain, except to suggest some questions. What are those mysterious careers which Dr. Daniels thinks are more important than wifehood and motherhood? How do the parents of the college girls who sit under the doctor's tutelage like the stuff she dishes out? What do the girls themselves, the normal ones, really think of their instructress? As most college girls have an alert sense of humor, probably the reply to the last query would be the most interesting of the three.

A NATIONAL HOME FOR AGED, INDIGENT OR DECREPIT PHYSICIANS. THIS IS THE FIRST MOVEMENT OF ITS KIND IN AMERICA

WE HOPE THE MEDICAL PROFESSION WILL ANSWER THE CALL AND WILL SEND GENEROUS CONTRIBUTIONS TO THE NATIONAL
TREASURER

Announcement was recently made by President Robert T. Morris, M. D., of The Physicians' Home, Inc., that an endowment campaign has been started by the Directors of the Home for the purpose of raising funds to endow a *national home* for aged and incapacitated physicians who are left without financial resources in the autumn of life.

The sum sought for the home has not yet been determined, but it should run into several millions of dollars, so as to guarantee the upkeep, through interest, of the national home and the several smaller units to be placed in the different states as may be determined later.

The Physicians' Home, Inc., is not an experiment in any sense. Four years ago one unit was established at Canadea, N. Y., through the generosity of Dr. Stephen V. Mountain, who generously donated the property and building at

Caneadea, N. Y., and it has met with such great success that the directors believe it their duty to enlarge the scope of the enterprise, because of the large waiting list which they are unable to accommodate at the Caneadea Unit.

The general plan outlined by Dr. Robert T. Morris and his associates, is to care for a thousand or more physicians at the national home and a dozen or more individuals in the smaller units.

At the present writing it would seem that a million and a half or two million dollars would be necessary, which sum would be invested in bonds of the securest and highest earning value, so as to secure an adequate return in interest to maintain the home and the units without recurring appeals to the medical profession or to the lay-man and woman.

The directors have in mind certain properties that will be had through gift or purchase. The character of the directors is such that the project is guaranteed as to its worthiness and feasibility.

The directors have had the project of a national home in mind for several years, but being practical men they thought they would try it out in the unit established at Caneadea, N. Y., and the success of this unit has been such that they now feel the time is propitious for a national campaign to which the medical profession will be asked to subscribe as their circumstances permit and public spirited citizens also will be asked to contribute.

The plan of campaign is not in any sense a "Drive." The funds are to be secured through the organization of interested groups in the various cities and towns, and it will take probably a year in this way to put over a campaign that will be dignified and in accordance with the high standard and ethics of the medical profession.

Dr. Charles H. Mayo of Rochester, Minn., has given his unqualified endorsement to the movement and is heading the Committee of Sponsors who will have the campaign in charge. Other prominent physicians and lay-men will also serve as sponsors.

The officers and directors of The Physicians' Home, Inc., are Robert T. Morris, M. D., President, 114 East 54th Street, New York, N. Y.; William H. Dieffenbach, M. D., Vice-President, 50 Central Park West, New York, N. Y.; Albert G. Weed, M. D., Treasurer, 152 West

57th Street, New York, N. Y.; Silas F. Hallock, M. D., Secretary, 901 Lexington Avenue, New York, N. Y.; Warren Coleman, M. D., 59 East 54th Street, New York, N. Y.; Max Einhorn, M. D., 20 East 63rd Street, New York, N. Y.; Wolff Freudenthal, M. D., 24 W. 88th Street, New York, N. Y.; J. Richard Kevin, M. D., 252 Gates Avenue, Brooklyn, New York; Stephen V. Mountain, M. D., Olean, N. Y.; Ralph Waldo, M. D., 54 West 71st Street New York, N. Y.

The campaign will be in charge of Mr. Charles Capehart and Mr. James F. MacGrath, and the national headquarters have already been opened on the 22nd floor of the Times Building at 42nd Street and Broadway, New York City, to which all inquiries should be sent.

All checks should be drawn to the order of "The Physicians' Home, Inc.," and should be forwarded to Dr. Albert G. Weed, National Treasurer, 22nd floor of the Times Building, 42nd Street and Broadway, New York City.

This is the first movement of its kind for physicians in America seeking to secure funds, the income from which will sustain an institution or a series of institutions, having for their purpose the care of those in the medical profession who through generosity, unpaid service, or who through their devotion to the pure science of medicine and laboratory investigation with its small financial return, or who through illness or incapacity find themselves in their declining years unable to provide themselves and their dependents with the necessities of life.

Of course, the medical profession has its percentage of those who have not had the training or opportunity to lay away sufficient money to finance them in their old age. Then, there are those who have not had the habit of collecting their bills, and who have suffered thereby; and it also will include the younger men in the profession, who, falling ill, have no place to go and none to care for them during their illness. To these latter this home and its units will prove a great blessing and God-send in administering to their needs until they regain health and can again take up the work of their profession.

This is not intended as a pauperizing movement, nor is the campaign to be one in which there is to be a "sob-element." It is rather to be a dignified effort on the part of the profession itself to take care of its own needy ones and

who ask the cooperation of the generous and well-to-do lay-man and woman to help.

From time to time we shall take pleasure in publishing the news of the campaign as it proceeds and it is our earnest hope that the medical profession will answer the call and will send generous contributions to the National Treasurer without waiting to be solicited further.

In no case more than in this appeal can one more definitely give twice by giving what he can quickly. The sooner funds are received the sooner the enterprise will be serving the deserving physicians.

The name tentatively selected for the Home is "Tranquillity"; a name that adequately defines peaceful comfort to all found within its walls.

The general plan is to have the Home so laid out that it will typify a real home within which are to be found all those little creature comforts essential to the peace of body and mind of those who are to be the beneficiaries.

One of the features will be a laboratory where the old physician may continue his investigations and study, and thus give him an opportunity of employing head and hand and heart for the advancement of his profession.

Another feature of the Home will be provision for the wife or other dependents of the physician so that families may not be broken up.

It is anticipated that the campaign will be inaugurated by a banquet in New York City to which the profession generally will be invited, as well as prominent lay-men and women.

Speakers of national repute and standing will launch the enterprise.

Remittances should be sent to *ENDOWMENT FUND CAMPAIGN THE PHYSICIANS' HOME INC., CAMPAIGN HEADQUARTERS*, Times Building, 42nd Street & Broadway, New York, N. Y.

THE PRACTICE OF CHIROPRACTIC ART COMES WITHIN THE PROVISIONS OF THE STATUTE REGULATING THE PRACTICE OF MEDICINE

In the case of the State v. Morrison (W. Va.), 127 S. E. R. 15: In this case the Supreme Court of Appeals of West Virginia, in affirming a judgment of conviction of the defendant for practicing medicine and surgery as defined by Section 8a, Chapter 150, in the 1923 code of that

state, without first having obtained a state license to do so, says that the weight of authority is to the effect that one who practices the chiropractic art or science comes within the provisions of a statute regulating the practice of medicine. Said Section 8a provides that the term "practice of medicine and surgery" as used by the West Virginia statute shall be construed to be the "treatment of any human ailment or infirmity by any method"; and that "to open an office for such purpose or to announce to the public in any way a readiness to treat the sick or afflicted, shall be deemed to engage in the practice of medicine and surgery within the meaning of this act." One who opens an office and announces to the public in any way that he is ready to treat the sick and afflicted, and has actually treated cases of paralysis, constipation, rheumatism, neuritis, sick headache, kidney trouble, lumbago, liver trouble, and divers other diseases by adjustment of the segments of the spinal column according to the chiropractic method of treating human ailments and infirmities, this court holds is "practicing medicine and surgery" as defined by said section.

The scope of the definition of the practice of medicine and surgery in Section 8a is too broad, its terms too explicit, and the intention is too plain to allow it to be modified and restricted by the former legislation. The mere fact that a school of medicine is not specifically mentioned does not in itself evidence an intention of the legislature to exclude it from the operation of the statute, if from a consideration of all its provisions the contrary clearly appears. The legislature cannot be expected to anticipate the founding of new methods of healing. It has by this statute evidenced its intention to regulate the practice of all medicine and surgery.

Nor does the court agree with the defendant's contention that, if the statute be construed to require him to pass an examination on the science of medicine, drugs and materia medica, as recognized and taught in Class A medical schools, or on the methods or practices peculiar to surgery as therein taught in order that he might lawfully practice his method of treatment of human ailments and diseases, then the statute would be unconstitutional and void as depriving him of the pursuit of a lawful calling as a means of acquiring property and obtaining happiness and safety. The statute does not contravene any

of the rights of the defendant guaranteed to him by the West Virginia and the federal constitutions. It is undoubtedly true that the privilege of engaging in the practice of medicine is a valuable property right protected by constitutional guarantees. But the preservation of the public health by the sovereign power is paramount to the exercise of the private privilege by the individual, and consequently the state has the inherent right by means of its police power to impose such reasonable restrictions on the practice of medicine as are deemed necessary to attain the end in view, the preservation of the public health.

DOCTOR ARE YOU DOING YOUR PART? HAVE YOU SUBSCRIBED TO THE LAY EDUCATIONAL FUND?

IF THIS WORK IS TO CONTINUE EVERY PHYSICIAN SHOULD CO-OPERATE TO THE LIMIT OF HIS ABILITY

Since the October issue of THE JOURNAL was published the following Doctors have subscribed to the Lay Educational Fund.

CHICAGO AND COOK COUNTY SUBSCRIBERS

Edward Lyman Cornell.

F. P. Thompson.

DOWN STATE SUBSCRIBERS

I. A. Botts—Industry.

G. R. Blackstone—Macomb.

Subscriptions thus far received have been directly acknowledged by the Lay Educational Committee, as well as by publication from month to month in the Journal. In the future only the previous month's subscriptions will be acknowledged in the Journal.

MAKE CHECKS PAYABLE TO THE ILLINOIS STATE MEDICAL SOCIETY

Name M. D.
Street
City..... County.....

Sign the above pledge card, make out a check payable to the Illinois State Medical Society and mail both in an envelope addressed as follows:

From

.....
.....
.....

ILLINOIS STATE MEDICAL SOCIETY,
c/o Cashier, Sheridan Trust and Savings Bank,
4738 Broadway, Chicago, Ill.

WHY THE INCREASE IN GALL STONES, GASTRIC INTESTINAL ULCER, AP- PENDICITIS AND THYROID DISEASE?

DEATH RATE IN THESE AILMENTS JUMP 75 TO
250 PER CENT IN TWENTY YEARS

Dr. A. Murat Wills at the recent meeting of American College of Surgeons in Philadelphia pointed out that during the period from 1905 to 1922 death from gall stone had increased 77 per cent; from gastro intestinal ulcer, 75 per cent; appendicitis, 31 per cent; and the mortality rate accompanying thyroid disease showed the stupendous increase of over 250 per cent.

Dr. Wills believes that these differences are not merely due to chance but suggests there may be found more plausible explanation for the decrease of mortality rate in other diseases, while no less definitely, it may be explained why we are having a steady increase in the number of deaths due to gall stones, ulcer, appendicitis and diseases of the thyroid.

ANATOMICAL DRAWINGS, CHARTS, ETC., MADE TO ORDER

Anatomical charts made perfectly in monochrome or color by expert at reasonable price. Tracing of operations and illustrations for medical publications. Bones, muscles, organs or complete cadaver. Address M. H. West, 1220-A North Dearborn Street, Chicago, Illinois.

WE PAY PHYSICIAN'S, SURGEON'S, OSTEOPATH'S AND CHIROPRACTOR'S TREATMENT—THE LATEST THING IN LIFE INSURANCE

The American Underwriter Insurance Company of Peoria, Illinois, has an accident insurance policy one feature of it which reads as follows: \$10.00 per year; no medical examination.

We will furnish you with an Accident policy which pays you \$5,000.00 if accidentally killed in any manner, \$5,000.00 for accidental loss of both eyes, or both feet, or both hands, or one hand and one foot in any manner, \$2,500.00 for accidental loss of one hand, or one foot in any manner, \$1,250.00 for accidental loss of one eye in any manner, \$25.00 per week for total loss of time for one hundred four weeks resulting from an accidental injury in any manner, \$12.50 per week for partial loss of time for ten weeks as a result of an accidental injury in any manner. *We pay for medical attendance for minor injuries which does not keep you from your duties and where no other claim is made, including physician's, surgeon's, osteopath's, and chiro-*

practor's treatment up to the amount of \$12.50. We also furnish you with identification card and agree if by any reason of accidental injury in any manner, the insured be physically unable to communicate with friends, the company upon receipt of advice at the home office at Peoria, Ill., giving your policy number (which is on your card) will defray all expenses necessary to put you in communication with and in care of friends, provided such expense shall not exceed \$50.00. All the above if the insured be accidentally injured in any manner, the only restrictions we make is in ballooning and aviation.

WE FURNISH ALL THE ABOVE WHICH COVERS EVERY INJURY FOR JUST \$10.00 PER YEAR, payable \$2.50 quarterly, \$5.00 semi-annually, or \$10.00 annually—about two and one-half cents a day. We pay for the first day. CAN YOU AFFORD NOT TO CARRY THIS INSURANCE?

No medical examination is necessary.

Note: We are wondering how this up-to-date life insurance company can overlook the opportunity of compensating Christian Scientists for absent treatment. Perhaps the schedule of fees acts as a deterrent factor in preventing the employment of the modern healer. Certainly the services of the absent doctors giving treatments from a thousand miles distant would prove essentially as valuable as the "cults" enumerated above.

HIRING DOCTORS AT DEPARTMENT STORE PRICES AND SELLING THE MEDICAL SERVICE ON A PROFITEERING SCALE

A CORPORATION OR MIDDLE MAN MAKING THE PROFITS ON THE MEDICAL SERVICE

The following from the October 19 issue of the *Wayne County Medical Society* shows the present trend of thought and action by many lay corporations and organizations:

A short time ago a gentleman slipped on the train at Chicago and slid off at Detroit with a feeling of confidence and prosperity. Detroit suckers and Detroit doctors would measure up well with those of Chicago. We use the term suckers advisedly, referring particularly to those gullible people who have the fear of God in their heart and that of death in their heads. An enthusiastic zest spurred Mr. Young as he left the Michigan Central Station. Breakfast and the inevitable Camel soothed his active brain.

He repaired leisurely to the office of a prominent bank official. "You are right," said the banker, "folks need more regular attention. Detroit doctors are not aggressive enough—your proposition sounds good." Writing a name and address on a slip of paper he closed the interview, handed the slip to Young and told him to "see that man."

Promptly at two o'clock Mr. Young called at the doctor's office whose name had been given him by the banker and had a dialogue substantially as follows ensued:

"My proposition is this, Doctor: In Chicago, I have been operating a Bureau of Health Analysis for some time. In Detroit we have already acquired approximately six hundred clients who send specimens to Chicago. They will continue to do this until the first of the year, when our new arrangement will be in force. I propose to continue a campaign here in Detroit and I want you to look after the laboratory end of it, which by the way is all there is to it. As a matter of fact I have secured in Detroit during the last few days approximately ninety subscribers at fifteen dollars each. Our clients furnish four specimens of urine a year and we give them four reports a year. We pay you forty cents for each specimen analyzed, which includes a microscopical as well as chemical examination. Occasionally some one requires a little advice or a diet slip, in which case you will receive twenty cents more. With three thousand subscribers and no overhead it is easy money, and I estimate that we can get that many.

"Yes," suggested the doctor, "but any reputable laboratory will do the analysis that you furnish for \$2.00, and many doctors will make such an examination, including a fairly good physical examination for five dollars."

"That makes no difference in this work, since there is not one man in five hundred who knows it."

"Do you advise these clients, as you call them, to consult their family doctor in case anything is found wrong with the urine?"

"Yes, as a rule, but we would be able to influence many of them to return to you for advice, thereby increasing your revenue."

"Then, as I understand it," said the doctor, "I stand a chance of picking up quite a few patients out of this deal as well as the forty cents for each quarterly examination."

"Yes, you have the idea, and in my opinion you ought to grab it."

"Well, my friend, I must admit that your proposition interests me. However, I would like to give it a little thought. Could you come in and see me again tomorrow?"

Mr. Young did not return. We suspect that someone disclosed to him the fact that he had been interviewing the President of the Wayne County Medical Society.

Just another "Rufus Wallingford" looking for a "Blackie Dav" as an accomplice and we are not so sure but that he will find one. There have been several similar schemes worked out upon a much grander scale here in Detroit, all of which have failed. The "suffering public" is rightly named.

Gentlemen of the Wayne County Medical Society, you have here the facts as accurately as we understand them, presented by our improvised dia-

logue. It requires no super mind for you to understand that the people—your patients—are being “gyped.” Sell them the proposition yourself—and add to it a physical examination.

MEDICAL TAXES SHOULD BE REDUCED

EXEMPTIONS ARE PERMITTED TO ALL TRADES, INDUSTRIES AND MERCANTILE ORGANIZATIONS THAT SEND THEIR REPRESENTATIVES TO VARIOUS PARTS OF THE COUNTRY

REPRESENTATIVES OF ASSOCIATION TO APPEAR BEFORE WAYS AND MEANS COMMITTEE

At a hearing before the Committee on Ways and Means of the House of Representatives held at Washington, October 21, a presentation of reasons was made for the reduction of the existing war tax on physicians under the Harrison Narcotic Law. The American Medical Association was represented at the hearing by Dr. Charles W. Richardson, Washington, D. C., member of the Board of Trustees, and by Dr. William C. Woodward, Chicago, executive secretary, Bureau of Legal Medicine and Legislation.

Dr. Richardson pointed out to the committee that prior to the war the federal tax or fee paid by physicians for a license under the Harrison Narcotic Law was one dollar. He said that the medical profession of the country gladly accepted the increased war tax of three dollars and that the profession did everything in its power to make the law effective. He said that, as many of the war taxes are being removed, this increased tax against physicians should now in justice be restored to the rate existing prior to the war.

Dr. Woodward stated that it is clearly a question of whether Congress will or will not reduce a war tax; that the present rate of three dollars was effected by the Revenue Act of 1918 along with other increases; that these other increases have, to a large extent, been removed or reduced.

“For a number of years,” said Dr. Woodward, “the tax derived from physicians under the narcotic act was nearly a half million dollars greater than the expenses of enforcing the act. Obviously, that was as it should be if one were dealing with a measure intending to raise revenue. Recently, however, the plea was made that inasmuch as approximately half a million dollars a year was being collected under the law, therefore the appropriation should be increased so as to permit the use of the entire amount for enforcing the law. That argument was accepted and an increased appropriation of half a million dollars was made. So it is not fair to take the cost of enforcing the law and fix the tax on that basis.

Representative W. R. Green, chairman of the committee, made the significant remark, “I suppose you are inclined to think that in any event the burden of enforcing the law ought to be on the whole public and not on the medical profession.” The remark of Chairman Green may be regarded as the crux of this proposed tax reduction. The enforcement of the law is clearly an expense which should be borne by the public generally and not by the medical profession

alone. Under no conditions can it be claimed that the enforcement of a general federal statute should be paid for exclusively by any class or any profession.

Drs. Richardson and Woodward also presented two proposed amendments to the existing federal income tax law; first, authority to deduct expenses incurred in attending meetings of scientific and professional organizations; and second, expenses of postgraduate study.

Dr. Richardson stated that, in the revenue acts of 1921 and 1924, exemptions are permitted to all trades, industries and mercantile organizations that send their representatives to various parts of the country. Dr. Woodward argued that the medical profession should be entitled to the same privilege, which has been denied to physicians under rulings of the Commissioner of Internal Revenue. The extent to which physicians are members of medical organizations and attend their meetings was shown by Dr. Woodward. He stated that inquiries were addressed to ninety-eight medical organizations, and seventy-seven of these reported their membership. The total membership of these seventy-seven medical organizations was 177,219. He stated that the estimated cost of attendance was \$1,718,000. On a 4 per cent basis, the tax amounted to \$68,726, which is a very conservative estimate of the federal taxes paid by the medical profession under this particular section of the law because of the adverse rulings of the Commissioner of Internal Revenue.

The Committee on Ways and Means will continue to hold hearings for a considerable time, and will then go into executive sessions for the purpose of drafting the new federal tax bill to be considered at the December session of Congress.—*Jour. A. M. A.*, Oct. 31, 1925.

MEDICAL ARTS CLUB OF CHICAGO CHANGES NAME AND INAUGURATES NEW PLANS

At a meeting of the board of directors of the Medical Arts Club, held October 30, it was unanimously voted to change the name of the club to the Medical and Dental Arts Club of Chicago. C. N. Johnson, D.D.S., retiring president of the American Dental Association, was elected a member of the board of directors. Mr. John A. King was elected as business manager in place of Mr. David MacLean. The report of the Chicago Trust Company, trustee, showed that there were in the hands of the trustees \$214,173.08 as a nucleus for a building fund. Plans for a building include an assembly hall seating from 700 to 800 for the regular meetings of the Chicago Medical and Chicago Dental societies and for other professional meetings and conventions, rooms for the various local special societies, headquarters for the Chicago Medical and Chicago Dental societies, the Illinois State Medical and Dental societies, the American Dental Association and others; club rooms for the convenience of the members; bedrooms for resident and out of town members and guests; the remainder of the building, including 75 per cent of the total available space, to be rented as stores, offices and salesrooms to firms doing business with physicians and dentists.

HOSPITALS FOR PERSONS OF MODERATE MEANS

At the recent conference of the British Hospital Association, it was pointed out that an increasingly large number of persons of moderate means are finding it more difficult to secure the advantages of recent advances in medicine on account of the expense, and that large numbers of the middle classes are forced to seek treatment in voluntary hospitals with the result that waiting lists obtain inordinate dimensions.

Among the suggestions proposed for the relief of this condition is the extension of hospital wards to paying patients.

UNIVERSITY OF WISCONSIN PUTS ON A FULL MEDICAL COURSE

Heretofore the University of Wisconsin has offered a two year course in medicine at Madison. On account of increased clinical facilities the University is now able to offer a full four years' course. The third year will begin in 1925 and the fourth year in 1926.

Correspondence

SHORT STORIES WRITTEN BY MEDICAL MEN

MANY DOCTORS HAVE WRITTEN BOOKS OF FICTION WORTHY OF BEING RECORDED

To the Editor: I am interested in compiling a collection of short stories written by doctors. As many of these stories are published under assumed names, or the medical degree of the author is omitted, it is difficult to locate them. I am, therefore, writing to ask that if you or your readers know of any short stories published by medical men you will kindly communicate the fact to me.

Assuring you that any information relative to this matter will be greatly appreciated, I am,

Very truly yours, HAROLD HAYS,
22 W. 74th St., New York City.

ESTIMATING THE WEIGHT OF THE BRAIN ON LIVING PERSONS BY MEANS OF EQUATIONS

Anthropological Psychiatry

Washington, D. C., Oct. 18, 1925.

The the Editor: The term anthropological psychiatry is a new one in other languages as well as in English. In using this new term my purpose is to apply those facts and methods of anthropology to psychiatry which may be of most scientific value. One of the latest methods of anthropological research is to estimate the weight of the brain on living persons by means of equations. We cannot predict the weight of brain as

exactly as astronomers foresee an eclipse, but I have combined an equation which I call the Lee-Welker-MacDonald formula, which so far as tested gives a fairly approximate estimate of brain weight on the living. The formula is as follows: (head length—11) x (head breadth—11) x (head height—11) x .000337 plus 406.01 equals cranial capacity in cubic centimeters, which multiplied by .93 gives the weight of the brain in grams on living persons.

Before, however, applying this combined equation to the living, I am now, for the first time, as far as I know, testing it upon the dead, where I make three measurements of the head, and then the brain is taken out and weighed; and the difference between the predicted and actual weight of brain is found. After I have tested this equation upon a sufficient number of the dead and found the percentage of error, it can be applied to the living both normal and abnormal persons.

I purpose to apply this equation to 4,000 patients in the Government Hospital for the Insane. As the error will be either larger or smaller than the actual weight of the brain, such errors in the case of large numbers of persons will balance one another, and give the approximate truth.

But it will be necessary to apply the equation to a sufficient number of normal persons for purposes of comparison. It is proposed to apply the equation to the 600 members of Congress as a control experiment for the normal.

As the largest number of insane is at about the age of 40, and as the average of the members of both Houses of Congress is between 40 and 50, such a control experiment will be of special value. Moreover, the insane in the hospital here at Washington come from all parts of the country.

The eleven (11) millimeters subtracted from each measurement of the head in the equation represent the average thickness of tissue on different parts of the head.

ARTHUR MACDONALD, M.D.,
Washington, D. C.

Note: Dr. MacDonald desires others to test the equations at autopsies and send measurements and estimates to him for which they will receive due credit.

Dr. MacDonald is the author of "Man and Abnormal Man," see U. S. Senate document No. 187, 58th Congress, 3rd Session, 788 pages.

Original Articles

THE INTERPRETATION OF THE COUGH SYMPTOM*

FREDERICK J. KALTEYER, M.D.,

Associate Professor of Medicine, Jefferson Medical College
PHILADELPHIA, PA.

Symptoms, or the reaction of the tissues to injurious agents, have been the chief guides in diagnosis since the beginning of the medical era. The investigation of symptoms has not, however, received the close attention it deserves, mainly because of the prevalent belief that the requirements of diagnosis are generally met by simply noting the presence or absence of symptoms, and that a clear conception of their mechanism is not essential. The reasons for this lack of interest or enthusiasm are on the one hand, a neglect to appreciate the true value of symptoms in distinguishing disease processes through knowledge acquired by a study of their production; and, on the other, the great difficulty encountered in pursuing this line of research, chiefly because methods for such investigation do not exist. The progress made in physiology, bacteriology, chemistry, and allied sciences has been as rapid as it has been remarkable, especially when compared to the tardy advance in symptomatology. Yet, with this high attainment in the so-called laboratory studies, none of us would venture the opinion that the facts acquired by an inquiry into symptoms are less valuable than those obtainable by laboratory methods.

The early manifestations of disease, especially in their acute forms, are chiefly those of disordered function, when remedial measures offer the best chance of success. The later stages are characterized in the main by alteration of structures.

The act of coughing consists essentially of a violent expiration, the air current being driven swiftly and forcibly through the bronchi, trachea, larynx, and mouth for the purpose of removing material from the air passages. As a rule, a deep and often quick inspiration precedes the expiration. Just before the expulsion of air, which is the main feature of the act, the vocal bands are approximated through the con-

traction of the adductor, constrictor or phonatory muscles of the larynx—the lateral crico-arytenoids, the arytenoids, and the thyo-arytenoids. The expiratory phase begins just before the separation of the approximated vocal bands, thereby causing the intrapulmonic pressure to rise momentarily. When the required tension is reached, the larynx opens, and the air sweeps out with the production of the characteristic cough sounds. Their acoustic qualities are due to the intensity of the air current, peculiarities in the tension of the vocal bands, differences in the diameter of the air passages, and variations in the consistency of material contained in the respiratory tract.

The muscles effecting the forcible expiration bring into action abdominal and thoracic groups; the muscles of inspiration—the diaphragm and intercostals; the muscles closing the glottis—the adductors of the larynx. They are governed by nerve mechanisms which concern:

1. Spinal centers and their efferent nerve fibers.
2. The inspiratory and the expiratory centers in the medulla, which excite and coordinate spinal centers.
3. The adductor laryngeal center and its efferent paths.
4. The various afferent nerves which stimulate the inspiratory, expiratory and adductor centers.
5. The cerebrum.

The existence of a special coordinating center controlling the act is still a matter of controversy. The evidence at hand lends weight to the opinion that such is not the case.

Coughing is generally volitional. When occurring during sleep, in soporous states, and in violent paroxysms, its purely reflex nature is suggested. It is difficult to determine to what extent it is an unconditioned or pure reflex, or to what degree it is a conditioned reflex, that is, one intensified by cerebral activity, perhaps volitional, since sensations of discomfort referred to the throat are often present.

Its mechanism appears to be as follows: In the unconditioned or purely reflex cough, the irritation to the afferent terminals being of a mild character, the nerve impulses are conveyed to the medulla, causing: 1. Increased activity

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of the inspiratory center; 2. stimulation of the adductor or constrictor center of the larynx; and 3. increased excitation of the expiratory center. (a) The inspiratory muscles; (b) the adductor muscles of the larynx, and (c) the expiratory muscles contract in response to this stimulation.

With more pronounced irritation, especially when located in the interarytenoid region (supplied by the superior laryngeal) impulses of greater intensity are transmitted, which not only reach the medulla where they stimulate the centers just named, but some of them pass upwards to the cerebrum where sensations are evoked and recognized as tickling, distress or pain referred to the throat. In the cerebrum, nerve impulses are now discharged and transmitted to the medulla. A purely reflex cough is converted into a more or less volitional act by the descending impulses which reinforce the function of the centers activated by the ascending impulses—conditioned reflex. The combined effects of the ascending and descending impulses intensify the action of the muscles innervated by them.

In volitional cough, impulses descend from the cerebrum to the centers in the medulla.

Causes—It is not the object of the author to attempt a systematic discussion of cough in various diseases in which it is symptomatic, but rather to emphasize its importance in some morbid affections with the hope of throwing light on its mechanism and clinical interpretation. Bed-side studies, carried out in a painstaking manner, are the chief, if not the only, means for the solution of these problems.

The regions in the body susceptible to stimulation and the nature of the stimulus effecting the reaction, have been the subject of extended investigations, which, however, have not clearly elucidated this problem.

Cough may be produced by irritation in certain parts of:

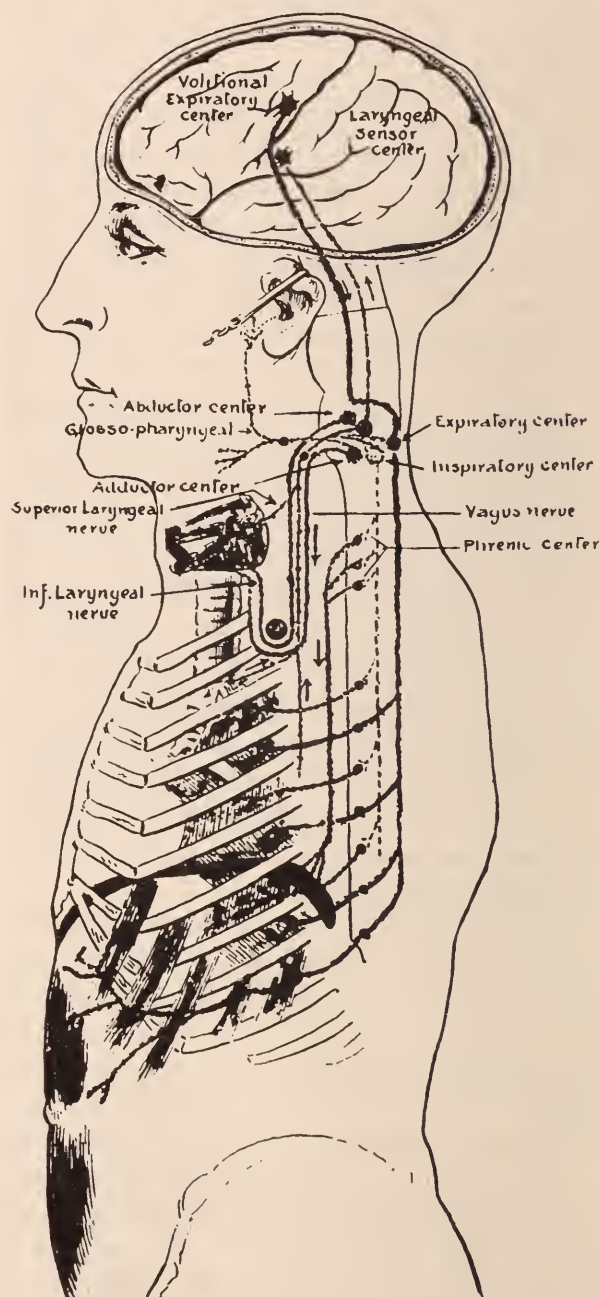
1. The respiratory passages—larynx, trachea, bronchi, pharynx and naso-pharynx
2. The pleura
3. The mediastinum
4. The external auditory canal.

In reflex cough, the interarytenoid region is the chief area from which afferent impulses arise. Slight irritation of the normal mucosa in

this locality by a variety of substances is followed by paroxysms of varying severity. This action is augmented when the organ is the seat of congestion and acute inflammation.

In pulmonary disease, as chronic ulcerative phthisis, when the products discharged from the

The Cough Mechanism



diseased lungs and bronchi reach the larynx, they provoke coughing as a rule. These paroxysms often continue until all the phlegm is expectorated.

Evidence has been brought forth showing that

the tracheal mucous membrane is capable of evoking the act with certain forms of stimulation. Sudden pressure of a bronchoscope on the mucosa of the trachea produces it, but this excitation is quickly tolerated, shown by cough subsidence without removing the instrument. When, however, a new area is touched, it returns. This low state of sensitiveness stands in strong contrast to that of the interarytenoid region, where the irritation is resented, and must, as a rule, be removed before the seizure ceases.

The dry harsh cough so conspicuous in the early stages of many cases of influenza appears to have a tracheal origin. A clearer understanding of its mechanism in grippe points the way to better management in therapeutics.

Stimulation of the larger bronchi, especially at the bifurcation of the trachea, appears capable of causing the reflex. These structures have a low state of irritability. The morning paroxysms in patients suffering from chronic pulmonary tuberculosis are probably of bronchial origin. On awaking, when the individual changes from the dorsal to the sitting position or turns on his side, the secretions accumulated during the night suddenly shift and effect stimulation.

It is not known whether the reflex can be evoked by excitation of the smaller bronchi.

The question whether the vesicular structure of the lung is supplied with afferent nerve terminals is also impossible to answer definitely. Clinically, a negative opinion is offered in acute cases of pulmonary consolidation characterized by an absence of bronchial exudate, which run an atussive course. The author observed an interesting example of this kind occurring in a young woman who had an infiltration of the upper portion of the right lung, readily demonstrable by physical signs and x-ray examination. Constitutional symptoms, fever, and emaciation were present. After prolonged treatment in a sanitarium, recovery followed. At no time in the course of her illness did cough occur. Positive evidence of the existence of the symptom in parenchymal pulmonary disease is wanting, as it is impossible to exclude pleural and respiratory tract stimulation.

Painful, dry cough is a cardinal symptom of acute pleural disease. It cannot be stated whether it has its origin in the costal or visceral pleura, or the subpleural tissues, as the afferent

nerve terminals supplying these structures have not been satisfactorily demonstrated in relation to this reflex. Its occurrence during aspiration of a pleural effusion, after much of the fluid has been removed, is a sign so well known to the clinician that it needs no special comment.

In mediastinal disorders involving the inferior laryngeal nerve by tension or pressure, as in aneurism of the arch of the aorta, it is an outstanding phenomenon. Text-books generally state that the ringing, dry cough of aneurism is caused by pressure on the recurrent laryngeal nerve, without offering a satisfactory explanation of its mechanism. Since the inferior laryngeal has essentially a motor function, nerve impulses are carried to the larynx, not to the medulla. Therefore, this does not entirely elucidate the problem. If, however, the symptom is analyzed more closely, it will be observed that with disordered function of the muscles of the organ, greater susceptibility of the nerve terminals of the superior laryngeal is acquired. The characteristic acoustic qualities of aneurismal cough are due largely to perturbations in the action of the laryngeal muscles.

The so-called ear cough is rarely diagnosed by the general practitioner, although sometimes a most distressing ailment. Without careful search, its cause is easily overlooked. It can be demonstrated in many individuals by lightly applying a probe to certain areas of the wall of the ear canal. The author had under his care a young woman suffering from violent attacks of cough of several years' duration, the nature of which was obscure. Fear was entertained that she was tuberculous, since her husband was the victim of this disease. A careful survey of her case relating to the pulmonary system gave negative findings. A highly sensitive inflammatory condition of the walls of the external auditory canal was the cause of her complaint. Appropriate treatment quickly caused a disappearance of her cough.

I have never been able to satisfy myself of the existence of a gastric origin for cough, nor from stimulation in disease of any of the abdominal or pelvic organs. The afferent nerve terminals appear to be confined only to the thorax respiratory passages, and ear.

Effects—A reaction of the tissues to noxious agents is injurious, protective or defensive, or indifferent. Within short periods, the degree of

response may vary so as to alter its usefulness or convert it into a harmful act. Tissue peculiarities, constitutional and local, are dominant factors in modifying reflex response. The influence of toxic states is generally depressive,—of acute inflammatory lesions, irritative.

The amount of expectoration, the readiness with which it is removed, the dangers of retention of material in the air-passages, and the influence of overstress on the lungs and circulation are matters too well known to the physician to require detailed description.

The efficiency of the act depends on the removal of phlegm from the air-passages without undue expenditure of energy. When caused by pathological disorders of the pleura, mediastinum, and auditory canal—regions which have no direct connection with the air-passages—its favorable influence, expressed in terms of sputum discharged, is entirely wanting. The severe racking paroxysms, so characteristic of the early stage of laryngitis, tracheitis, and bronchitis, before exudation takes place, often yield promptly to the influence of sedatives, which prevent injury from mechanical disturbances. One of the perils of influenza from the acutely inflamed trachea is the frequent, dry, noisy, and often painful cough, out of all proportion to the necessity to expectorate. Its dangers are not fully realized in the production of complications of this disease.

In cough, interference with the filling of the heart and retardation of the flow of blood through the vessels always occur, and, when pronounced or protracted, are responsible for cardiac asthenia, venous congestion, and bleeding. Conjunctival hemorrhage—the blood-shot eye—is well known to all of us. Serious accidents to the circulation are perhaps of more common occurrence than generally supposed. We can recall many cases which display the malign influence on the vascular system when the seizures are in excess of the needs to remove secretions, or when they are weak and frequently repeated, but lack strength sufficient to raise sputa high enough to be expelled. The author had under his care a young woman, who, at the age of nine years, had an attack of whooping cough, which caused extensive retinal hemorrhages. Unfortunately, the outcome was almost complete, permanent blindness. Its effect on the myocardium

is shown in the case of a middle-aged man in whom profound myocardial weakness with low blood-pressure was the sequel of a protracted cough. Recently, I saw a middle-aged woman suffering from chronic valvular disease, in whom severe paroxysms prevented readjustment of compensation. The use of heroin, after other cough sedatives had failed, gave her relief and comfort, and finally was the means of strengthening the myocardium. The attitude of the profession in urging the passage of the measure, now enacted into law, prohibiting the importation and manufacture of heroin, is difficult to comprehend.

In computing the results of any plan of treatment in pneumonia, as with sera and pneumococcicidal drugs, due consideration must be given to the effects of mechanical disorders brought about by structural changes in the respiratory organs. The consequences of severe cough in favoring the spread of pleural infection, in aggravating pain, in causing wakefulness, in increasing the strain on the circulatory apparatus, are factors which influence the course of this disease and its mortality.

Disturbances of intra-abdominal pressure, from prolonged paroxysms, produce vomiting. The development of hernia is also due to this cause. A serious complication occasioned by the powerful expiration of the act was brought to my attention in the case of a physician, aged fifty-one, who contracted whooping cough. His illness was severe and the paroxysms were of such violence that three ribs were fractured. The diagnosis was confirmed by the x-rays. Although more than a year has now elapsed, he still has attacks of coughing when he leans back in a chair so as to cause pressure over the area which was the seat of the fracture. The explanation, I believe, is found in pleural stimulation which arises at a point where adhesions exist.

Extra-pulmonary varieties of cough—pleural, mediastinal and ear—are wholly or in the main injurious, and their diagnosis calls for special care.

The author expresses his thanks to Doctor Albert P. Brubaker, Professor of Physiology in the Jefferson Medical College, for valuable suggestions relating to the physiology of this subject and for the preparation of the diagram.

MENTAL HEALTH, A PUBLIC HEALTH PROBLEM*

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Problems of public health concern themselves with the well-being of society. Whatever threatens to a marked degree the physical integrity of the individual must be dealt with in an organized way by the group as a whole.

Well being, however, implies *well doing*. Without behavior appropriate to the needs of the individual and the requirements of society there can be no serious thought of health in the broadest sense of the term. Thus a campaign against typhoid in a city of aments or dements is inconceivable. Dualism of mind and body is scientifically unacceptable. The brain has evolved as the result of demands made upon the organism for increasingly complicated types of response to environmental stimuli. It is an organ of adaptation, just as is the hand or the heart, although its method of functioning is more difficult to appreciate. Much has been done to establish the activities and inter-relationships of various regions of the brain, but many mysteries still enshroud its operations. The greatest of these concerns the ego, the consciousness of self. A sense of differentiation from the environment, of personal pleasure and pain, etc., causes one to wonder if what we call the self can be no more than a combination of phenomena induced by the biochemical activities of the brain in response to the demands of the environment and the activities of the various bodily organs. Religion and metaphysics find origin in this refusal of the ego to identify itself with the other phenomena of matter. And yet, while many men of distinctive attainments in science, chemistry, physics and physiology, refuse to subscribe to a wholly mechanistic theory of personal identity, none presume to deny the dependence of mentality upon the physical state of the brain.

It is a matter of common knowledge that sclerosis of the cerebral arteries, with its consequent disturbance of brain nutrition, brings about difficulties in thinking and disorders of behavior. So, too, when a widespread area of cortical cells with their connecting fibers de-

generate, as in paresis, senile dementia, Huntington's chorea, etc., mentality and behavior suffer. When alcohol has poisoned the nerve tissues these function poorly and a diagnosis is made of drunkenness, without thought of demoniacal possession. Various other drugs such as cocaine, morphin and hyosein, and endogenous toxins such as are elaborated in the acute infections, toxic goiter and uremia have a marked effect upon mentation by way of producing deliria, excited states and stupors. The abnormal mental states of puberty, the climacterium and menstrual periods are commonly accepted as due to endocrine disturbances, and of late years this relationship of mind and body has been a fertile one for investigation and speculation.

Mental defectiveness is usually dependent upon a failure of brain development which can be demonstrated by the neuropathologist. The epilepsies constitute a group of behavioristic difficulties displaying certain common phenomena as the result of inherited or acquired cortical cell excitability, plus the effect of irritating substances manufactured in the organism, or, as in the case of alcohol, introduced from without. Dementia praecox is very possibly the result of an intoxication of certain nervous elements of the brain, perhaps in and about the basal nuclei, although present day laboratory methods fail to demonstrate pathognomonic changes. Lethargic encephalitis with its rather characteristic lesions is at times followed by manifestations which suggest those of dementia praecox, thus pointing to the possibility of a chronic or subacute intoxication in the same regions of the brain as the precipitating cause of the latter disease.

The frequent relationship of the neuroses and psychoneuroses to trauma, physical illness and the abnormalities of the sexual life is familiar to all. Child study reveals the fact that a considerable amount of behavior difficulty in the young rests upon an evident physical basis, i. e., insufficient and improper nourishment, bad tonsils and adenoids, endocrine imbalance, fatigue, etc. Everywhere we find evidences of the influence of matter upon mind, of the physical upon the psychic life. Evidently then the problem of treatment and prevention is essentially a medical one. Over 6,000 patients were admitted to the state hospitals of Illinois last year—over 4,000 for the first time in their lives; while upon the outside, in the every-day walks of life, 10,000

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incipient cases were developing. Three thousand five hundred feeble-minded are now under state care and 2 per cent of our grade school pupils are defective. In the training schools for juvenile delinquents there are over 2,300 boys, girls and young men. The prisons contain another 3,500, and the community harbors many thousands more of potential neurotics, insane, delinquent and criminals.

After conceding the more evident relationships of mind and body there can be no good reason for consigning to the psychologist and the metaphysician those behavior difficulties of children and adults in which the connection is not so demonstrable. No line can be drawn through the midst of abnormal conduct to separate that which is physical from that which is psychic in origin. The problem as a whole lies in the field of medical practice. The physician, like the alcoholic of sainted memory, may "take it or leave it alone"—but as a medical obligation he cannot leave it alone.

If then this problem is to be definitely grasped and dealt with, an approach must be made by way of research and education before prevention and treatment can be rationalized.

The study of mental disease and defectiveness, delinquency and crime has resulted in few startling discoveries, but has produced in late years, upon the foundation of the past, a considerable mass of information concerning the relationship of abnormal behavior to heredity, early training and environment, physical inferiorities and disease. We are coming to realize the dependence of conduct upon a multitude of factors within and without the individual. We are learning roughly to appraise original endowments and to measure the effect of the forces at work in his life, and, upon the basis of these determinations, to outline a rational treatment for the patient, together with prophylaxis for others.

Along with research goes the education of the public and the profession at large. A rapidly increasing literature written for lay consumption attests to the public's hunger for information upon these subjects. People want to know about themselves, their abnormalities and those of their neighbors, and what can be done about it all. The practitioner requires something more than mere common sense in dealing with nervousness, incipient mental disorders, defectiveness and de-

linquency, but his failure to recognize the extent of the problem and to relate it to medical practice is a decided obstacle to his enlightenment. *Although the dualistic conception of mind and body has been discarded in theory, it still persists in practice.* Too many medical men still view these matters with indifference as the field of a few specialists, interested in a rather fruitless and restricted area of semi-metaphysical practice. This regrettable lack of insight must be done away with before they can undertake the work awaiting them.

The courts, the state hospitals, the colonies for the feeble-minded, the correctional schools and prisons all recite very plainly the story of final or semi-final results. Associated with these state agencies for the segregation of abnormal individuals there are, however, some organized activities for the study and prevention of asocial and anti-social conduct. The Institute for Juvenile Research in the Department of Public Welfare, under the direction of the Criminologist, represents the partial accomplishment of a growing plan for the study of juvenile behavior abnormalities. This work, together with the study of convicts and delinquents in this same division, and extensive surveys in grade schools, represents a sincere attempt to grapple with the problem and to train workers in this field.

The work of the State Alienist, together with that of the Psychopathic Institute, up to the present time has for the most part been within the state hospitals for the insane, but with the expectation of a further development, within the near future, of possibilities for research and education. A beginning has been made along these lines in the establishment of a central laboratory for diagnostic and research work, intensive training courses for state hospital physicians, and longer ones in psychiatric nursing for the pupils and graduates of general hospital training schools.

These activities, even though they may be considerably developed and enlarged in the future, do not spell state medicine. They constitute an open door by means of which the physician and indirectly the public may enter into a fertile field to their mutual advantage.

Research into the causes for abnormal behavior and the education of profession and public along these lines must continue on a larger scale than heretofore if the public health is to be conserved.

The state will go on developing policies and methods for group control and care, and the interested and enlightened practitioner sustained by special advice and guidance will come to cope intelligently with individual behavior problems, thus supplying that cooperation without which no public health program can be effective.

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DISCUSSION

Dr. C. C. Ellis, Moline: I open this discussion with no opportunity to prepare myself, but having been associated with the essayist and having worked with the State Department of Public Welfare and with State Department of Public Health, I feel I bring a little experience. Also, I am now engaged in the private work of a practitioner on the outside and see both his viewpoint and the viewpoint of the public. If this paper were analyzed carefully you would see that the doctor covers very important points very rapidly.

In talking of the brain and its organic or functional diseases it is difficult to visualize the organ we are talking about and difficult to relate its anatomy and its physiology. I can best represent it in this way. We know what a complicated mechanism a radio is—all those intricate little parts, each having an important function, sometimes spread out on a board four or five feet long. Now about the organs of the brain. The authorities describe 50 to 60 centers with connecting nerves, all carrying on some more or less interdependent, complicated functions. Now with these instead of being extended we have them folded in and tightly packed in the skull. In doing neurological work and psychiatric work here is the puzzle, to get the various parts visualized out and know their relationship. We have not been able to do it altogether in an anatomical and physiological sense, but we are beginning to see light.

In speaking of mental diseases and public health problems I think we have to deal with heredity first. Before he comes into being the individual's heredity is in the shaping. There is a problem that cannot be neglected. Then as he enters the world, the obstetrical problem comes up. We are just finding out how many hemorrhages, how many accidents, occur at that time. The point was brought up about a blood test at the moment of birth—another good point. At an early age, scarlet fever, and other infectious metabolic disturbances, dietic errors, are encountered, which may leave traces never recovered from. Then we may step into nervous diseases per se—the child in its relationship with the mother—in its relationship with other children, as the first child, the second child, etc. Its environment, agreeable or disagreeable,—war and peace, enlightenment and ignorance. All these things stressing this childish organism. A little later the glands—puberty and adolescence. Here we find room for adjustment, room for interpreta-

tion, and we must have it early or the time is past, the stamp is there, and nothing can be done. At an early age enters the educational problem. The child is pulled over by a machine into a compulsory stamping process. Health has often been neglected as day in and day out this routine impresses itself on this child. I feel that there is a place for religious training for the child, using the emotional, affective spheres of mentality to clinch many homely truths and habits, this religio-educational relation affecting the mind of the child as it has affected the race from its infancy. A properly graduated transition from conventional fable and religious precept to technical scientific truth can be arranged without shock or disillusionment to a harmful degree.

I want to speak in particular in regard to state hospital work. I have a thought that has been impressed upon me since going into private work. The state hospitals have been cramped by lack of funds and the state hospitals' medical association has ceased to function, has fallen into disuse or been abandoned. That society might have been a better contact for state hospital physicians and their patients, the private practitioner and the public if it had been more widely used. There must be some way of getting the facts collected in the work of the state hospitals back to the public and the private physicians. There is a failure on the part of the physician to interest himself in psychiatry. It seems to be a wish on the part of the physician to not interest himself. One chief reason is that there is no way of making it very remunerative at present. There are problems to be worked out. We have not the facilities for handling mental patients in the general hospitals and in the community. I would like to see the state hospital make more of an effort to place the patient who can secure any help in an outside environment where he could best get along, for the best environment is not always the state hospital itself. I believe that the state hospital should cooperate with the local medical profession in each community in an effort to help them solve as many psychiatric problems as possible in the local, private or public institutions, hospitals, without feeling that they are the sole and only logical means of solving the problem of the mentally afflicted.

Dr. Charles F. Read, Chicago (closing): I have not presented this paper so much from the viewpoint of a state institute man as with the hope of interesting you in this question as a public health problem. Any disorder of the body—and the mind is only a function of the body—that brings six thousand patients into state hospitals yearly, and partially handicaps we do not know how many more in the community, is certainly a matter of public interest, especially to the general practitioner who is too apt, I think, to look upon it as a problem belonging entirely to the specialist and to the state in its role of guardian of defectives and insane. These troubles begin in the home. These mental abnormalities are first observed by some

practitioner, and he should know how to cope with them, should at least be able to recognize what the problem is and cooperate with those who are fitted either to direct him in his treatment of the case or to take it over entirely if that is necessary. The more enlightenment we have, the more of these cases that are treated in the home, the more children we shall save from future trouble.

FUNCTIONS OF THE SKIN AND THEIR RELATION TO GENERAL MEDICINE*

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In many general diseases skin manifestations undeniably play an important part. In the past this was frequently utilized for diagnostic purposes, while the modern conception of disease prefers to rely more particularly on the more exact methods of the laboratory. This seems but reasonable.

The evaluation of changes in the skin, which are less pronounced, require more experience, and even then a classification of the differentiations frequently presents difficulties.

The importance and the value of the *Relation of Changes in the Skin to General Medicine* as a scientific problem is quite another matter. In numerous diseases the corresponding changes in the skin are found with such regularity that a connection between the two is evident even though we do not comprehend the reason and the details. Out of the vast number of well known skin manifestations we refer only (1) to the acute exanthematous infectious diseases; (2) the secondary stage of syphilis with its characteristic skin lesions, directly attributable to the excitant; (3) tuberculosis and pernicious anemia, examples of accompanying skin symptoms of a more secondary nature. Thus the clinical observation of the skin immediately leads to a study of its relation to general medicine.

I. CLINICAL EXPERIENCE

We know that the skin is an organ, perhaps it would be better to say, an organic system, comprising many individual parts which are closely related, and which are subject to a regulatory influence. It is highly probable that this regulation originates in and is exercised by some

factors outside the skin. The coordination of the functions of the entire skin is sufficient evidence of such a regulation, a fact which should be kept in mind as being of primary importance.

The knowledge of the physiologic functions of the skin is established beyond doubt; regulation of body temperature, metabolism of the skin, perspiration, are recognized as such. The dependence of these functions upon the involuntary nervous system has been definitely determined. From experience with pilocarpin and atropin we know that the regulation of these functions does not lie within the skin itself, just as the secretion of gastric juices does not depend solely upon the stomach and the secretion of saliva is not influenced merely by the salivary glands, but by the involuntary nerves controlling them. Physiologically, the skin is recognized as an organ with individual functions. A normally functioning skin is prerequisite to normal health. As far as the relation of the skin to general pathology is concerned, we are still somewhat nebulous.

We know that in other organs, for instance, in the bone marrow, there are reserve forces, the same as in any other tissue of the body. The increase of leucocytes produced by the bone marrow in an acute disease cannot be considered as pathologic; it may represent merely an increase of the physiologic action of this organ. The result is a leucocytosis. This disappears, if the body no longer needs it. Leukemia, a tumorlike growth of one certain kind of cells at the expense of another type, manifested by a tremendous production of leucocytes, must be considered a pathologic condition. The question as to whether in case of infection the physiologic function is increased by taking advantage of the reserve forces is immaterial and is in no way connected with the problem as to whether this function merely evidences a healthy store of reserve forces or if it indicates a basic pathologic change. Consideration of the purpose only, and not of the facts themselves, would constitute a violation of the laws of logic. This point of view is important, for conclusions as to any condition of the skin manifestations of disease require treatment. Any increase of function, however, should be encouraged, otherwise, the operation of the normal resources of the body would be curtailed. The following questions

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may cover the problem of the skin and its relation to general medicine:

When does a skin manifestation indicate that the skin itself is sick?

When does a skin manifestation indicate that the skin is engaged in helpful resistance to a body enemy?

This subject is so vast that we shall limit discussion to the role of the skin in general infectious diseases.

The original idea of our studies was conceived from clinic experience; thus also this paper is based upon clinic observations.

Three groups among the general infectious diseases required attention: the first comprises those affections in which the skin is only accidentally involved and in which the skin condition appears metastatically; in this group belong such septic conditions as endocarditis, typhus, infection with pneumococci, streptococci and staphylococci, generally caused by a thrombophlebotic process, and some rare forms of a general gonorrheal disease. The excitants circulate in the blood stream. An occasional narrow lumen in one of the smaller vessels entails an embolism of bacteria, either in the skin, the lung, the liver, or in some other organ. Here the involvement of the skin is merely passive, no special functions being affected.

One example of a second group is found in the secondary stage of syphilis. Also here skin lesions are caused directly by spirochetes; no like lesions are found in other organs as in the above described septic conditions. In this group of cases a definite and timely limited pathologic condition recurs with absolute regularity, particularly in the skin. We are stating the facts; we know nothing of the underlying causes. Nor do we know how many other *so-called* skin diseases are of the same nature. It is highly probable that these also are systemic diseases which at a certain stage of their development are limited partly or entirely to the skin. Surely, a certain relation of the skin to this particular excitant must lead to this affinity. Some authors are of the opinion that the intensity of the skin manifestations, for instance, in the secondary stage of syphilis, is indicative of the prognosis; in other words, it is assumed that the skin in comparison to the intensity of such symptoms gradually develops an immunity to those specific toxins.

To the third group belong the acute exanthematous infections, scarlet fever, measles, variola, etc. In these conditions it has never been possible to determine the presence of excitants in the skin. The epidermis is not the only seat of the disease. In scarlet fever, for example, the bone marrow system is invaded by bacteria (the same as in pneumonia and in typhus), the throat is involved, but the manifestations of the skin are so typical and striking that for hundreds of years it gave the disease its name. That these diseases, as a rule, leave the patient permanently immune to reinfection is another clinical experience several hundred years old. Typhus infections develop immune bodies, nevertheless, the patient is just as liable to contract the disease a second or even a third time. Acute exanthematous infections, therefore, constitute a special group in this particular.

Another point of interest to the subject lies in the following: about 150 years ago Jenner succeeded in preventing the occurrence of smallpox by rubbing the content of a smallpox animal pustule *into the broken skin*. The result was a local infection and then, as a rule, lifelong immunity. A *subdermal* injection of the same vaccine proved to be of no value. It afforded no protection, nor did any symptoms of infection develop. The pustule produced by vaccination cannot be regarded as a manifestation of a pathologic condition only—it is merely evidence of the protective activity of the skin.

To a certain extent these conclusions apply equally to scarlet fever and to measles. We do not know whether the virus enters the skin or not, but we do know that the immunity reaction takes place in diseases with such skin involvements, so-called exanthemata. The skin *may be* the seat of the disease; it *certainly is* the seat of a part of the resistance and the cause of immunity.

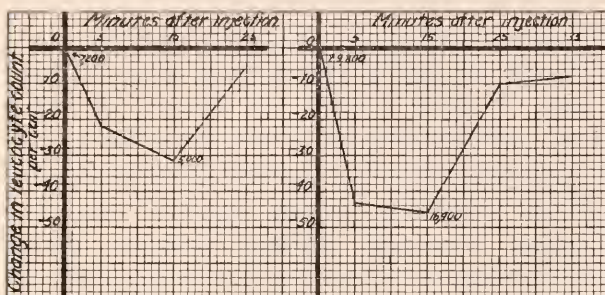
Clinical experiences justify these conclusions.

The skin as a reflection of a systemic disease and the skin as the seat of immunization, are the issues to be determined. Clinical experiences have proved beyond a doubt the basis for these conclusions; but a great many details have to be studied experimentally and settled before further conclusions can be drawn.

II. EXPERIMENTAL STUDIES

Many physiologic functions of the skin are

closely connected with the involuntary nervous system, especially with the vagus, or rather with the entire parasympathetic fibres. Observations of the normal physiologic processes within the body demonstrate this; for instance, small doses of pilocarpin increase perspiration, while small doses of atropin diminish it.



Normal Person.

Pneumonia.

CHART 1.

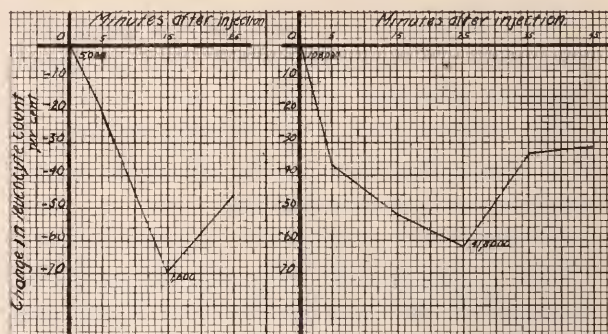
An observation made in 1918 and but little understood at that time, proved to have far reaching consequences for the studies of the relation of the skin to general medicine. This observation became the starting point of all these recent investigations in this field.

A patient suffering from chronic gonorrhea with a small discharge containing a few leucocytes, mucus and epithelial cells, was given an intradermal injection of a nonspecific, non-tissue irritating protein (Aolan); eighteen to twenty-four hours after the injection a marked increase in excretion was observed. Microscopic study of this excretion showed large numbers of fresh, readily stained leucocytes and greatly resembled the picture presented by a fresh gonorrhea. This reaction was observed in many otherlike cases by repeating such intradermal injection. Controls were made, and an equal amount of the identical fluid was injected subcutaneously, intramuscularly and intravenously. Nothing happened. The dose had to be increased 50 to 100 times in order to produce a similar reaction via one of the other routes of injection.

This discovery opened a new field of study of the skin. Here was evidence of a relation between the skin and other distant organs, which latter were responsible for the increase of the excretion. As subcutaneous injection proved useless for this purpose, this property, of necessity, proved to be inherent in the skin.

Continued study of the various factors led to

a second finding. Intradermal injection of 0.3 cc. of Aolan produces peripheric leukopenia of short duration, both in the healthy and in the sick. For a period of from 20 to 40 minutes the leucocytes decrease to two-thirds to one-half of the original counts.



Pernicious Anemia.

Leukemia.

CHART 2.

The above charts 1 and 2 present only some examples of the quoted leucocyte findings after intradermal injections of 0.3 cc. Aolan in the human. The curves show the decrease in the number of leucocytes during a period of 30 to 40 minutes after the injection, given in per cent. of the original count. Absolute numbers will be found additionally at the starting point as well as at the lowest point of the curves. The reaction on the leucocytes is the same in normal persons as in patients suffering from pneumonia (with usually large numbers) or from pernicious anemia (with its continuous marked leukopenia), and even cases of leukemia, with an original count of 154,000 leucocytes, show no exception.

Recent investigations which were conducted in this country have revealed that, due to a reaction of the parasympathetic fibres, the missing leucocytes are detained for a short period in the vessels of the liver and in other vessels controlled by the splanchnic nerve. This finding presents another phenomenon which depends entirely upon the activity of the skin and not upon the solution used for injection. Even the administration of air into the skin is productive of the same results, i. e., leukopenia of short duration. On the other hand, such a reaction cannot be obtained by subcutaneous injection of air or even of proteins.

Another series of examinations from a different angle led to the same results. If Aolan or

saline is injected into the skin, the subcutaneous vessels become dilated and are soon filled with leucocytes, largely of the polymorphonuclear variety. If the identical substance is injected subcutaneously into the immediate vicinity of the vessels, no such reaction is observed; it cannot, therefore, be due to a direct chemical influence, but is to be attributed to some distant influence, acting by way of some connection be-

was caused by the parasympathetic fibres, and in both cases the skin was responsible for this phenomenon.

The following observations may be regarded as proof of the close relation of the skin, not only to the walls of the vessels and the leucocytes, but also to the colloidal state of the serum:

(1) Syphilitic cases of long standing and with a negative Wassermann reaction were induced to give a positive Wassermann reaction, at least for some days or weeks, if injected intradermally with small quantities of a nonspecific protein. (2) Changes were observed both in the sodium chloride and in the phosphorous content, as also in the uric acid of blood and urine after intradermal, but not after subcutaneous injections of like quantities of protein or of physiologic salt solution.

Our most recent investigations have revealed the following interesting facts: animals were given intradermal injections of insulin. The immediate effect was the same as when the subcutaneous route of injection was employed, but the effect of the intradermal injections was

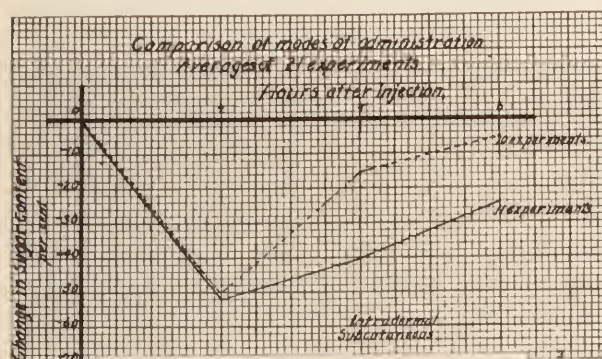
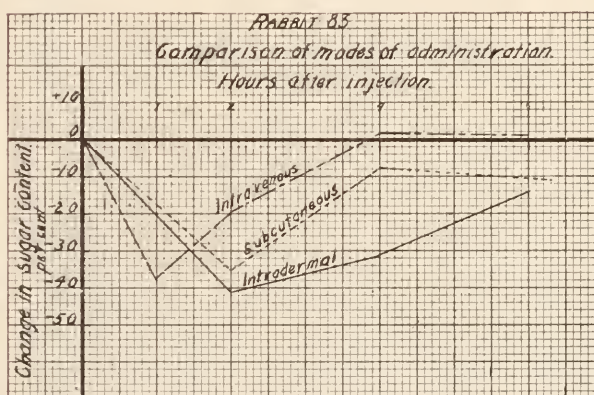


CHART 3.

From experiments by E. F. Mueller, M. D., and H. B. Corbett to be published in the J. Amer. Pharm. Ass'n., 1925.

tween the skin and the vessels and involving no influence due to the transfer of a chemical substance. However, this connection may be established, the parasympathetic fibres, dilators of the vessels are in some way affected.

The above described leukopenia of short duration, following intracutaneous injection, is also caused by a vessel's dilation, on this occasion, not in the skin, but in the area of the splanchnic nerve, more particularly in the liver. Both these reactions may be interrupted or prevented by paralyzing the parasympathetic system by means of atropin injections or by nullifying its action by an overstimulation of the sympathetic system with adrenalin. The correctness of these observations was verified in a large series of patients and shows the importance of the parasympathetic system in the production of such far-reaching skin activities. They further show the close relation existing between the skin and the parasympathetic system and also lead one to the conclusion that there exists a connection between the walls of the dilated vessels and the white blood cells, the number of which increases in these dilated parts. The results of these investigations speak for themselves. It was determined that the number of neutrophile leucocytes increased wherever the vessels were found actively dilated. The dilation, near and remote,



From experiments by Mueller and Corbett to be published in the J. Amer. Pharm. Assn., 1925.

CHART 4.

found to be considerably prolonged, the most striking difference being found in the fourth and sixth hour after administration.

Charts 3 and 4 demonstrate graphically these very unusual results. Chart 3 shows in each of two curves the average of ten tests in animals which were injected with 0.5 units Iletin per kg. body weight. The differences between both curves, representing the results on the blood sugar content after intradermal and subcutaneous injection are evident without further explanation.

Chart 4 shows similar differences in the results

obtained in the same animal representing only one of many examples. The effect of 0.5 units of Iletin on the blood sugar content is very pronounced after intradermal administration, while the subcutaneous and the intravenous injection of a like quantity is gradually less effective.

A few days ago identical results were obtained in human therapy, thus confirming the preliminary animal tests. Here again the involuntary nervous system seems to be the causative factor. As far as we can conclude from our results to date, it is evidently a case of energy transfer by way of nerve fibres, and not a chemical effect produced by discolored substances circulating in the blood stream.

We have submitted but a few examples gathered from the experimental work carried on in the course of the last few years; they are intended to clarify skin properties which were recognized from clinical experiences.

The skin and the diagnosis of local skin reactions is another part of the highly interesting field of study in which Americans have largely been the pioneers. The work of Dick and his collaborators on scarlet fever,—the publications on the diagnosis of asthma—the studies on hyper-sensitiveness to foodstuffs—all involve the skin. The skin merely provides a reflection of certain processes in the body. The time is too short to give details. For instance, the complete relationship between the skin and the asthmatic manifestations is undeniable. The skin reflects these abnormal processes in a local reaction showing a deviation from the normal absorption of various proteins. In asthmatic conditions the individual functions of the skin are involved, very probably by pathologic changes of the entire organism, manifested also by the same deviation from the normal in the lungs in the presence of asthma-causing agents which are not at all irritating in normal persons. The local reaction of the skin, as well as of the mucus membranes of the lungs are merely a reflection which becomes determinable through active interference with the vital processes of the organs. The more that the fundamental idea—the need for considering the skin as an entity—receives consideration, the more the skin reactions will gain in importance for diagnostic purposes.

III. STUDIES ON THERAPEUTIC ACTIVITIES OF THE SKIN

Therapeutically, the activity of the skin may be divided under two headings: 1. direct action, 2. remote action. Diphtheria toxins *in vivo*, are detoxicated by the skin, *in vitro*, by macerated sections of the skin. Typhus toxins and typhus bacilli so completely lose their specificity that their intradermal administration does not lead to any production of antibodies, this being a directly opposite result from that following subcutaneous injection. Neufeld recently succeeded in demonstrating the detoxicating influence of the skin in the loss of virulence of highly virulent bacteria when they entered the organism by way of a normal skin. This indicates a direct antibacterial influence of skin tissue without the aid of blood cells. Indirect action, manifested at a distant point, is perhaps even more important; the action of the skin stimulated by purely nonspecific agents in gonorrheal epididymitis affords a good example. The intradermal injection of a non-specific, non-tissue-irritating milk-albumin acts on the symptoms of epididymitis in the course of a few hours. Five to fourteen hours after injection there appears a marked redness at the site of the inflamed area and at the same time a decided increase in urethral excretion, the latter, as a rule, having disappeared simultaneously with the development of the epididymitis; pain is relieved immediately, and the swelling disappears within a few days.

The reason is as follows: through this intradermal injection (for which Aolan is used) the whole parasympathetic system receives a strong stimulus which quickly reaches the vessels controlled by the splanchnic nerve, and there follows an increase in the number of leucocytes in this area. In all other areas of the body the stimulation is immediately counteracted by the action of the sympathetic fibres; this does not apply to areas of inflammation where the tonus of the sympathetic is abnormally low so that it will not even respond to adrenalin. In this region, therefore, the stimulus which emanates from the skin can become fully effective. The vessels become markedly dilated, and the result is a like reflex increase in the number of leucocytes and thus a stimulation of the natural process of healing without even the smallest particle of the injected substance reaching the site

of inflammation. This constitutes the fundamental importance of the given case. The remote action is due, not to the fluid injected, but rather to the action of the skin as an individual organ which conducted the stimulation by way of the parasympathetic system to a distant point. The remote effects (stimulation) of the skin are here apparent in their most pronounced form and cannot be induced by subcutaneous administration. These effects are additional to the above described direct action of the skin on living bacteria and their toxins, and to its reflection of the body's reactivity by local skin reactions, which are diagnostically important.

I have endeavored to give you a few chapters out of the present experimental work on the skin and its relation to the problems of general medicine which may be summarized as follows:

SUMMARY

1. The skin as an individual organ is closely bound up with the problems of general medicine. Skin functions, as known for centuries, play an important part in physiologic processes such as regulation of body temperature, perspiration, etc. These functions are controlled by the involuntary nervous system.

2. In pathologic conditions the involvement of the skin becomes evident not necessarily because the skin is affected by the causative disease, but because the cutaneous surface as a part of the body has contingently suffered a change in its vital processes. Thus the skin furnishes a reflection of the general pathologic conditions involving the body's metabolism. This reflection is manifested either by visible symptoms or by changes in the skin metabolism which latter may be made visible by introducing certain proteins. This is known as a specific local reaction, and is used for diagnostic purposes in disease of general changes of body metabolism (asthma, hypersensitiveness).

3. Experimental work on the lines of local and far-reaching skin activities has determined: there is (a) a local antibactericidal and antitoxic property of the skin tissue itself; (b) a close relationship to the parasympathetic part of the involuntary nervous system and by this way to the subcutaneous vessels and to the vessels controlled by the splanchnic nerve. Every stimulus from the skin is manifested more or less at the site of those vessels, carrying certain

influences to the leucocytes and to the colloidal state of the serum.

4. If areas of inflammation exist in the body, non-specific agents, injected intradermally give rise to a reaction at the site of the infection; this may be used for therapeutic purposes.

5. Certain specific agents (until now only experimentally proved with insulin) are enlarged in their specific action, when administered intradermally.

6. The skin in its entirety, demonstrable hitherto only in some of its properties, represents a part of the body's resistance activity and is therefore to be considered as an independent organ of equal importance to others.

7. The reactivity of the skin to specific mediums is valuable diagnostically. In therapy, the skin is utilizable intradermally, because of its immunizing properties and non-specific agents supply the medium for its stimulation.

THE TREATMENT OF SEPTICEMIAS AND INTOXICATIONS IN INFANTS AND CHILDREN*

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TORONTO, ONT.

The management and treatment of blood infections and toxemias has been more or less empirical, usually involving, if possible, eradication of the focus, and elimination of the toxemia by the usual routes, viz., skin, bowels and kidneys. We must admit that these measures have not been successful and what patients have recovered following these methods have done so due to their overcoming, themselves, the infection or the toxemia, as the case may be. During the past two or three years various dyes and bacteriicidal solutions (such as Mercurochrome) have been tried, but with indifferent success.

There must be few indeed who would fail to acknowledge our present inability to determine the etiology of disease, but none who would fail to recognize the fact that the causative agent or agents are transferred to their ultimate sphere of activity through the blood, which we know to be a complex nutritive medium, containing, besides the elements of nutrition and stimulators

*Read before the Inter-State Post-Graduate Assembly of America, Milwaukee, Wis., Oct. 27-31, 1924.

**Cuts by courtesy of Wisconsin Medical Journal.

of growth, protective or anti-bodies, and in addition the little understood etiologic factors of disease. Death or recovery may take place through the complete or incomplete ascendancy of one of these over the other. Thus, one may readily assume that the tide may be favorably turned by supplying the host with an extra amount of complement or germ combative agents and at the same time removing an equal or

material was injected simultaneously. In this manner, therefore, it is feasible to remove a large amount of septic or toxic blood without the patient exhibiting any serious signs of blood depletion.

As the author of this method's experience increased he felt that the more complete the re-

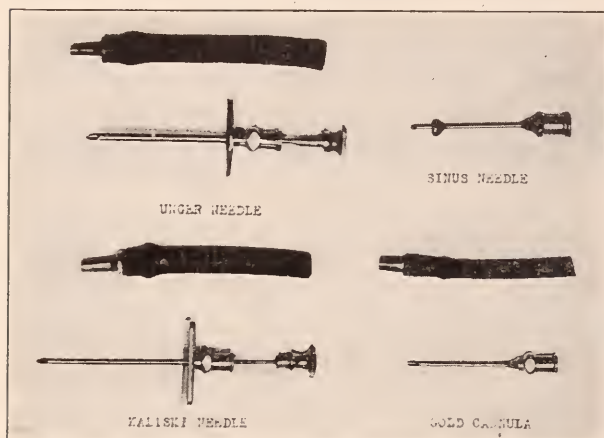


Fig. 1. Instruments.

nearly equal amount of septic or toxic blood, as the case might be. In the majority of instances the toxemia arises from a source which cannot be attacked surgically (for example, the toxemia of acute intestinal intoxication, of septic scarlet, of erysipelas, and of severe superficial burns).

The plan that has been adopted in the Children's Hospital at Toronto was developed and perfected by the late Dr. Bruce Robertson of the surgical staff. The operation is known as "Exsanguination-Transfusion (Bruce, R.)." This observer noted, in France in 1916, the remarkable recovery made by two soldiers from carbon monoxide poisoning treated by bleeding and then a simple transfusion. Robertson felt, following this procedure, that the removal of the altered blood played a large factor in the rapid cure. Following the war he conducted a series of animal experiments which produced most encouraging results. It was, however, soon noted that in order to effect satisfactory results large quantities of blood should be removed before it was replaced with fresh blood. Needless to say, only a certain amount of blood could be removed at once before signs of hemorrhage occurred, so, in order to still further empty the circulation at the same time that blood was removed, fresh



Fig. 2. In young infants.

placement of the patient's blood with fresh non-toxic material was effected, the more dramatic and permanent were the results. Since the author's original description of this method in 1921 there have been approximately 600 such operations for various conditions performed in our clinic.

Technique. We feel that we cannot do better than to quote from Robertson's excellent descrip-

tion of his own method (Arch. of Surgery, July, 1924):

"We have made it a rule, before commencing the operation, to secure a sufficient number of suitable donors to provide considerably more blood for transfusion than the total quantity known to be contained in the patient's body. Unfortunately, the necessity of replacing, all or nearly all, of the patient's blood with blood transfused from donors place a definite limitation on the general application of the method. Obviously it is practically out of the question to accomplish such results in adults. The method has been limited, therefore, with a few ex-

use of for the exsanguination (Fig. 2), but in children in whom the anterior fontanelle is closed the femoral vein provides a suitable substitute. The superficial veins are not satisfactory as they cannot be relied upon to yield a rapid and continuous flow of blood. When the femoral vein is used, a large cannula is introduced into it through the saphenous vein, which can readily be picked up just before it perforates the cribriform fascia (Fig. 3). By introducing the cannula in this way, the continuity of the femoral vein is not disturbed, and the risk of injuring the circulation of the limb is avoided.

"Blood is now withdrawn from the patient until signs of exsanguination begin. The amount of blood withdrawn at this stage varies greatly, and depends entirely on the effect on the patient. We have found the amount withdrawn from small children to vary from 60 c.c. to 160 c.c. With the first sign of weakening pulse, one of the 100 c.c. syringes containing citrated blood from the donors is connected with

the transfusion cannula, and the introduction of fresh blood is commenced. If it appears that the withdrawal of blood has approached too close to the margin of safety, five to ten minims (0.3 to 0.6 c.c.) of a 1/1000 epinephrin solution are administered by means of a hypodermic needle thrust into the rubber tubing which connects the transfusion syringe with the cannula in the vein. After transfusion has begun, the withdrawal and the introduction of blood are carried on simultaneously at approximately the same rate until all the available blood has been transfused. As a rule, we have introduced rather more blood than was removed, the excess usually being from 100 to 150 c.c., but if, prior to operation, there were cyanosis and other signs of failing circulation, we have made it a practice to withdraw slightly more blood than the total amount injected."

The curative effect of this method of treatment in certain toxemias and septicemias in children has been amply demonstrated clinically and bacteriologically. The results may be considered to have been brought about in two ways: (a) mechanically by removing a large amount of the toxin or bacteria, as the case may be, and (b) serologically by supplying the complement and immune bodies normally present in adult blood. This operation has been performed chiefly in the following conditions: 1. Acute intestinal intoxication. 2. Erysipelas. 3. Septicemia. 4. Septic scarlet fever. 5. Resorcin poisoning. 6. Acidosis. 7. Toxemia of severe burns.

DISCUSSION AND RESULTS OBTAINED IN THE CONDITIONS MENTIONED

1. *Acute Intestinal Intoxication.* Active Causes.

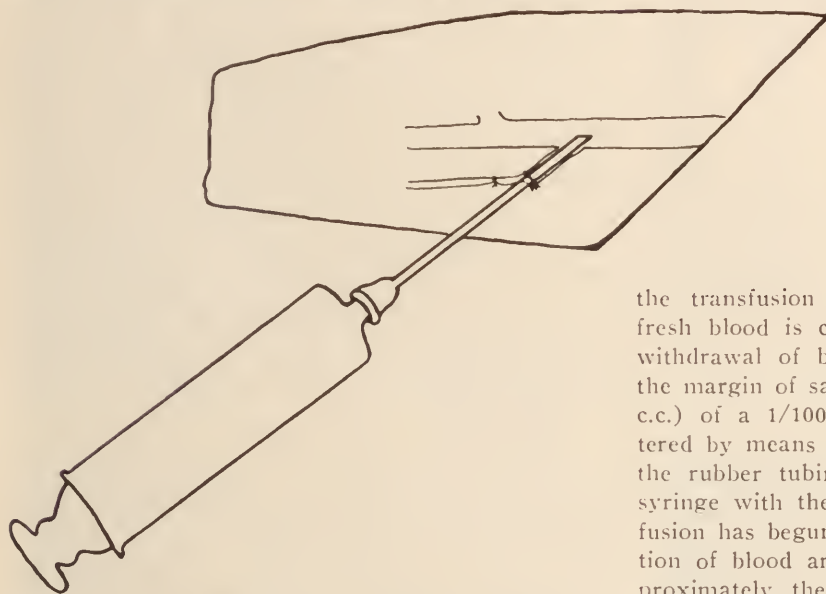


Fig. 3. Entering femoral via saphenous vein..

ceptions, to children, and usually to children under three or four years of age.

"The technic of the operation is as follows: blood is withdrawn by puncture of the median basilic vein of the donor or donors into 100 c.c. glass syringes, each of which contains 10 c.c. of freshly prepared 3.5 per cent, sodium citrate solution. As each syringe is filled it is inverted several times to ensure the proper mixing of the contents, and then emptied into a basin. A quantity equal, at least, to the total circulation of the patient is thus obtained. In estimating the amount required we have been accustomed to consider that the quantity of blood in any patient's circulation is roughly 35 c.c. per pound of body weight. The desired amount having been withdrawn, it is laid aside until required at a later stage of the operation. Its temperature is maintained during this time by a water bath, at a temperature of 100 degrees F.

"The recipient is then prepared. The cannula for the transfusion is first tied into a suitable vein, such as the internal saphenous at the ankle, or the median basilic at the elbow, and 10% glucose solution is slowly introduced to prevent clotting. The exsanguination cannula is then inserted (Fig. 1). In small infants, the superior longitudinal sinus is made

The primary cause of acute intestinal intoxication may be: 1. Production of some toxic substance from the food by decomposition; 2. Improper foods; 3. Infection of the intestinal wall with bacteria; or 4. Abnormal absorption of catabolites from the bowel. Numerous bacterio-

TABLE 1. ACUTE INTESTINAL INTOXICATION

Number of Cases.....	105			
(Male, 63; Female, 42)				
Cured	58			
Died	47			
Mortality	44.7%			
With ordinary measures of treatment, mortality was 84% in a similar series.				
AGE INCIDENCE				
Age Group	Cases	Cured	Died	Mortality
Under 1 mo.....	2	1	1	50%
1-2 mos.	55	27	28	50.9%
2-6 mos.	32	20	12	37.5%
6-12 mos.	11	7	4	36.3%
12-18 mos.	1	1	..	..%
18-24 mos.	4	2	2	50%
Over 2 yrs.....				
	105	58	47	44.7%
<i>A reduction of 40% over the usual methods employed.</i>				

A reduction of 40% over the usual methods employed.

logical researches have failed to reveal a pathog-
nomonic organism. Mellanby in 1915 suggested
the possibility of an amine base, which could
readily be formed from histidine, a non-toxic
substance, found normally in the bowel. He
produced comparable symptoms in animals by
injecting the B-iminoazolyethylamine into their
gastro-intestinal tract. From our experimental
work we consider the cause of acute intestinal
intoxication to be a circulating toxin, produced
in the mucous membrane of the bowel. Chemi-
cally the substance resembles closely an amine
base, and possibly is the normal toxic substance
found by Starling in bowel mucous membrane.
Further work is being done to determine whether
the symptoms are due to an overproduction or
increased absorption of this substance. Numer-
ous organisms may play a secondary role in pro-
ducing the poison by converting a harmless pro-
tein split product from an acid to a toxic basic
substance.

Pathology. There are no characteristic patho-
logical lesions. The commonest, and frequently
the only, abnormality seen is a fatty liver. This
change was observed in 75 per cent of our cases
in the gross. Microscopically it is almost uni-
versally present and is lobular in type. The
fatty changes were more marked in the very
acute cases.

No pathognomonic changes were seen in the
bowel. Cases having a history of previous gastro-
intestinal upsets presented a catarrhal enteritis
in some instances. Circulatory changes, varying
from congestion and petechial hemorrhages to

actual ulceration were seen, in two cases. These
latter changes are those seen in any intoxication
caused by proteins, or their split products.

In addition, however, to the above changes
there is the condition of dehydration, which
means diminished blood flow and a blood con-
centration. This condition of anhydremia nat-
urally encourages or augments the effect of the
toxic substances. A means of directly combating
an unknown toxin is difficult. The presence of
a circulating toxin which is intimately asso-
ciated with the blood cells suggests, however, the
removal of the medium which contains this toxic
substance and the injection of fresh blood to still
further combat the remaining toxemia. This
procedure was, therefore, adopted as an improved
method in dealing with intoxication in our clinic
three years ago, and as a result our mortality
has been most favorably affected, as the follow-
ing figures show. In addition to this treatment
the free exhibition of fluids in the form of 10-20
per cent glucose by nasal drip, subcutaneously
and frequently into the blood stream, must not
be neglected.

2. *Erysipelas*. This infection in the new born,
i. e., up to one month, is accompanied by prac-
tically a 100 per cent mortality, which is prob-
ably due to the almost complete lack of immunity
in young infants, to the streptococcus hemolyticus
which may be recovered from the blood stream
in most cases of this disease. As the infant in-
creases in age this ability to produce immunity
to this organism is increased so that the mor-
tality with the ordinary methods of treatment in

TABLE 2. ERYSIPELAS

Mortality in Age Groups following treatment by Exsanguina- tion—Transfusion. Hospital for Sick Children, Toronto.				
Age Group	Cases	Cured	Died	Mortality
Under 1 mo.....	18	8	10	55.5
1-6 mos.....	32	27	5	15.6
6-12 mos.....	17	16	1	5.8
1-2 yrs.....	8	8	..	..
2-6 yrs.....	5	5	..	..
Totals.....	80	64	16	20.0

A reduction in the mortality of the new born, 45%.

the same infection from one month to one year
is reduced to 50 per cent. As a matter of in-
terest, we noted the general mortality of 52 con-
secutive cases that were not transfused to be 28.8
per cent (excluding the new born), and observed
that these corresponded with a mortality of 28.3
per cent of 53 cases of a similar series reported
by Knox from Baltimore. Comparing these re-
sults with Robertson's method of exsanguination,
as recorded in the table, leaves little doubt in

one's mind regarding its efficacy in this type of infection. It should be particularly noted that many of these new-born infants that recovered had a hemolytic streptococcus in the blood stream.

3. *Septicemia*. Generalized blood infections in children are fraught with almost 100 per cent mortality and, while Robertson's method had not effected the striking results observed in other conditions, we feel that it has on numerous occasions been effectual in bringing about a cure. Conditions where there exists an irradicable focus of infection which supplies a continual stream of organisms such as in osteomyelitis and septic throats especially, do not offer the same degree of hope for recovery. In contrast to these types of cases one sees excellent results following umbilical infection in the new born, or sepsis neonatorum. In a few instances where a bacterial count in the blood has been made at the beginning of the operation, immediately after there has been a very striking reduction, as is shown in the plates. To still further augment the value of the exsanguination transfusion, we recommend at the conclusion of the injection a full dose of mercurochrome, which procedure at least has a firm theoretical basis. As yet we have not had sufficient experience with this latter procedure to make a definite statement as to the results obtained. The few remarks on the following two cases will serve to illustrate in a very striking manner the recovery of apparently two hopeless cases.

Case 1. S. H., Aged 3 years. Severe chickenpox followed by infestation of several of the poc marks on the abdomen and thigh. The temperature rapidly assumed the septic type and on the second day of the illness there existed a profound toxemia accompanied by almost continuous delirium. The blood culture was positive with a profuse growth of hemolytic streptococci. Three exsanguination transfusions were performed at 1 or 2 day intervals employing between 2000 to 2200 c.c. on each occasion. The child made a prompt and complete recovery. As further evidence of the severity of the infection was the fact that the slough extended down to the muscles and fasciae. It is a matter of interest to note that 111 individuals were grouped (Group III Jansky) in order to supply sufficient blood to the correct group for this patient.

Case 2. B. E., Aged 2 weeks. Premature infant weighing 3 lbs. Umbilical infection with a hemolytic streptococcus in the blood. Septic temperature. Three exsanguinations employing approximately 300 c.c. at each operation. Marked reductions and finally elimination of organisms from the blood as shown

in the plates. This child is now two years old and quite normal. This is rather a remarkable case due to the fact that it was (a) premature infant having low resistance, and (b) the small size, i. e., 3 lbs.

4. *Septic Scarlet Fever*. With the advent of Dick's and Dochez's new work in scarlet fever, it scarcely appears necessary to suggest other forms of management in cases of malignant scarlet. Until, however, the anti-scarlet fever serum becomes universally available one must be prepared to meet the emergencies that occasionally arise in this treacherous disease. Experimental work has demonstrated that scarlet fever is a local infection of the throat produced by a toxin producing streptococcus, with rapid absorption of the poison from the point of entry. The mortality in septic scarlet is high and treatment instituted must be prompt if a successful issue is to be fulfilled. We have had four cases of malignant scarlet exsanguinated with complete recovery in all. The results thus speak for themselves. The following case report illustrates in a very striking manner the situation to be met.

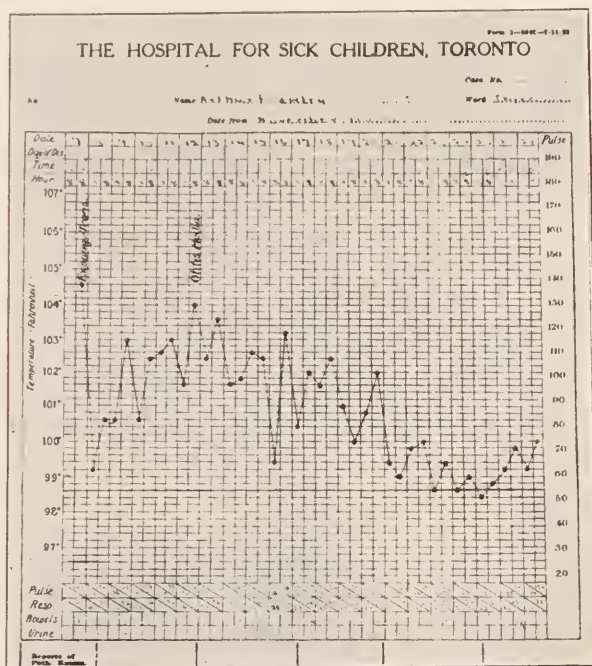


Fig. 4. Temperature chart of a case of septic scarlet fever. Treated by exsanguination-transfusion. Recovery.

Case 3. A. F. Private Patient of the author's and cited by B. R. in Arch. of Surgery, July, 1924, IX, 13. A. F. aged 13 years, twenty-four hours before admission became suddenly ill with fever, delirium, vomiting and cyanosis. On admission, the patient was delirious, the temperature was 104 degrees, the palate was intensely congested with punctate

hemorrhage scattered over it, the tonsils were much swollen, the tongue coated showing definite small scattered pink papules, with slight erythema about the axillae, while the cervical glands were much enlarged. Tentative diagnosis: Acute septic scarlet fever (this was confirmed at a later date by the appearance of desquamation). Exsanguinated 500 c.c. transfused 625 c.c. on admission. Rapid fall in temperature and improvement in general condition followed. The temperature subsequently rose and the patient ran through the ordinary course of scarlet fever complicated by otitis media. In this case, the operation apparently relieved the patient of the toxemia which overwhelmed him at the onset of the disease. The blood culture was negative. Recovery followed.

6. *Drug Poisoning.* Preparations containing resorcin and tar are very frequently employed in the treatment of infantile eczema with most gratifying results, but both of these drugs are not free of toxic substances and consequently are not without danger in their employment. Both belong to the phenolic group of substances and are closely related to carbolic acid. Their action is somewhat similar to that of carbolic, but less irritant and poisonous. Members of this group when absorbed by the body are conjugated, largely in the liver, with sulphuric or glucuronic acid to form non-toxic esters, which are then excreted by the kidneys. Their mode of action may be considered from three aspects:

1. A very rapid absorption from the skin of a large dose of the drug.
2. A moderate absorption with failure to be converted into non-toxic substances.

3. *Drug Idiosyncrasy.* It is well known that patients suffering from infantile eczema occasionally collapse and die; so far no adequate reason has been advanced. The possibility of drug absorption must be considered. Two instances of drug poisoning in eczema have been reported from our clinic by Tisdall and Graham; both of these infants recovered following exsanguination transfusion. The symptoms in these two cases appeared in a few hours after the application of 4 per cent resorcin ointment to a raw surface, consisted of an ashen gray color promptly followed by weak pulse and collapse. In each instance prompt recovery followed the removal of the toxic blood with injection of fresh non-toxic adult blood. Carboluria was present in each case. The application of the Robertson treatment to these two cases naturally suggests its

use in all cases of drug poisoning where alterations in the blood and liver occur following absorption.

7. *Toxemia of Severe Burns.* It was the high mortality in this condition that primarily led Robertson to investigate the cause of burn toxemia and if possible to find suitable treatment. Deaths from burns in children result from two causes: (a) Primary shock, which is comparable to ordinary traumatic shock, and (b) toxic shock, which is the result of absorption of certain toxins produced in the burned area. In primary shock, little can be done to relieve the condition, while a great reduction in the mortality of toxic shock has resulted following the observations made by Robertson.

TABLE 3. BURNS

Number of Cases.....				53
Cured				29
Died				24
Mortality				45.2%
Age Group	Cases	Cured	Died	Mortality
Under 6 mos.....	1	..	1	25%
6-12 mos.....	3	3	..	25%
12-18 mos.....	9	6	3	47.8%
18-24 mos.....	14	6	8	47.8%
2-4 yrs.....	17	12	5	29%
4-6 yrs.....	4	2	2	....
Over 6 yrs.....	5	..	5	....
	53	29	24	45.2%

A reduction in mortality of 55%.

In a considerable number of cases there is only mild primary shock and then follows an interval in which the patient appears to be in good condition, in fact this apparent good condition is frequently out of all proportion to the extent of the burn. Usually at the conclusion of 24 to 48 hours the temperature rises and symptoms of toxemia develop. The child becomes drowsy, the circulation depressed and the pulse rapid. In the cases that go on to recovery both the temperature and toxemia begin to subside about the fifty day, after which the problem is that of local treatment of the burned area. In the severe cases both the temperature (106°) and toxemia rapidly increase and vomiting supervenes. The pulse becomes more rapid and weak and the patient takes on a dusky hue, an indication of capillary stases. The final stage is convulsions, after one or two of which the patient dies.

From a critical study of many burned cases it was found that there was an increase of non-protein nitrogen in the blood which is probably due to the tissue destruction, while from a purely clinical aspect Robertson concluded that the

burned tissues were responsible for the toxin which is taken up by the blood. The appearance of these symptoms of toxemia 24-36 hours following the burn probably indicate that the damaged tissue must be in contact with living tissue before a toxic substance can be manufactured.

The nature of the toxin is not definitely known but from the clinical symptom it appears closely allied to the toxins produced in secondary wound shock and in intussusception

as a result of burning living tissues. The toxin is most highly concentrated in solutions of corpuscles suitably treated and to a lesser extent is present in the blood serum. Boyd's further work showed that this toxin consists of primary and secondary proteoses and like snake venom, it is made up of two portions, a necrotoxic and a neurotoxic. The former is not destroyed by heat and is diffusible; the latter is thermolabile and colloidal. There was no evidence of anti-toxin production in the blood although other

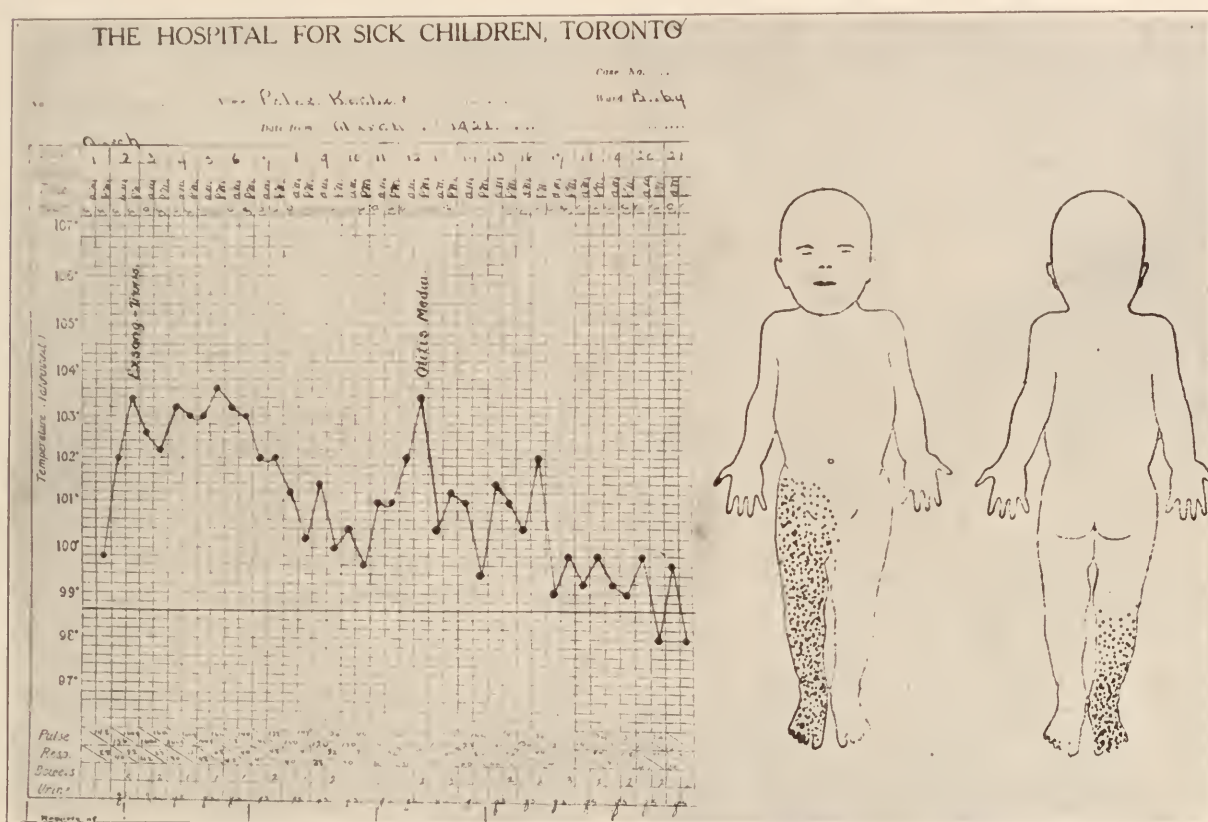


Fig. 5. Temperature chart and drawing of a severe scald with intense toxemia, treated by exsanguination transfusion which was followed by recovery.

(Robertson). It differs however from these toxins in that it causes convulsions. From experimental work conducted by Gladys Boyd in our laboratories it was found that there is a substance produced in burned tissues (in larger quantities in extensive skin burns than in those of other tissues) which circulates in the blood, either in, or closely absorbed to, the red blood cells and which causes the symptoms of toxic shock and in some cases death. The toxic material is produced in increasing amounts following the burning of the tissue until from 24 to 36 hours after the injury. It is produced only

observers have reported having observed some anti-body production.

With this short discussion of burn toxemia one may readily realize the obstacle to encounter in dealing with this condition. From the hospital records we noted no recoveries in any child following a convulsion under the ordinary methods of treatment, while with exsanguination transfusion the general mortality has been reduced to 45%.

Case 4. P. K., aged 13 months, was admitted two hours after a severe first, second and third degree scald of the extent indicated in the diagram. A severe

toxemia developed twelve hours after admission, and the child had several severe convulsions. The pulse rose to 160 and became very weak. The child was drowsy, toxic and cyanosed. Exsanguinated 300 c.c. and transfused 400 c.c. twenty-four hours after admission. One convulsion following transfusion. There was steady improvement following the transfusion, interrupted only by an elevation of temperature due to otitis media.

Miscellaneous. The method of exsanguination has been used in other conditions not previously stated in which there appeared to exist a form of unknown toxemia and in which all previous methods of treatment were unsuccessful. Instances of improvement and cure were noted in cases of severe acidosis of unknown etiology, primary peritonitis, infectious diarrhea in which there is always an accompanying toxemia, and diabetic coma, while no apparent benefit was noted in cases of uremia, toxemia of intussusception, and general peritonitis.

Remarks.

1. The operation to be successful should only be performed by the most skilled surgeon, the procedure in the hands of the unskilled is not without danger.

2. The most striking results are obtained in—

1. burn toxemia. A reduction of 55% in the mortality.
2. erysipelas of the new born. A reduction of 45% in the mortality.
3. acute intestinal intoxication. A reduction of 40% in the mortality.
4. Septicemia. (to a lesser extent but worthy of trial).

3. Any procedure which effects a considerable reduction in the mortality in certain conditions is worthy of trial.

RECLAIMING HOPELESS CHEST CASES*

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Two years ago, at the annual meeting of this Society at Decatur, in a paper devoted to the general considerations of the "Indications and Technique for Major Chest Surgery," we presented the first of our series of operations for the purpose of relieving otherwise hopeless pulmonary disease and, in 1924, at the meeting at

Springfield, we presented additional cases in the discussion of a paper on "The Changing Attitude in the Treatment of Pulmonary Tuberculosis" given by Dr. Palmer before the section on medicine.

During the past year, there has been manifested an increasing interest in the possibilities of chest surgery for the relief of advanced pulmonary disease on the part of both physicians and surgeons and during that period our series of operative cases has grown to a point where we feel that we are justified in reaching some reasonably definite conclusions. During the intervening time, we have also had the opportunity to follow up the subsequent history of our operative cases and, from these subsequent histories, to draw some conclusions of definite practical value.

A generation or so ago, chronic diseases of the lung, of which pulmonary tuberculosis was the most common and the most formidable, were regarded with the utmost pessimism not only by the lay public, but by the medical profession. It was not uncommon for even the thoroughly competent physician to raise the question as to whether a case of indisputable and well established consumption ever resulted in recovery.

Within the past two decades, however, with the tremendous interest which has attached to tuberculosis in the greatest popular campaign that has ever been waged against any disease, the professional attitude has materially changed and it has come to be recognized that the tremendous fatality formerly attributed to the disease was largely due to failure to recognize it in its earlier and more readily curable stages.

Early diagnosis and modern hygienic treatment, in which rest out-measures all other factors in importance, have led to the recovery of countless thousands until, the last few years, it has become a sort of axiom that tuberculosis is a distinctly curable disease provided diagnosis is made and treatment begun during the early stages and carried out properly over a sufficient length of time. In other words, it has come to be accepted that cure of tuberculosis depends on diagnosis made early enough and complete physical rest and treatment continued long enough.

While this statement is not entirely correct—while there are certain types of pulmonary tuberculosis which are hopeless however early the

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diagnosis or whatever the method of treatment—accent is still placed upon early diagnosis as the big factor in cure.

On this account, many of the scores of sanatoria which have developed during the past ten or fifteen years have confined their attention to early or moderately advanced cases, closing their doors upon those in the more advanced stages of the disease and relegating them to the ranks of the hopeless and the incurable. More than one competent authority has been quoted to the effect that, while we have made enormous strides during the past few years, while the mortality from tuberculosis has been reduced fully fifty per cent and while the earlier cases are curable, we are as helpless as we have always been when confronted with far advanced active pulmonary disease.

It is for the purpose of correcting this widely spread impression and for the purpose of directing attention to the more promising picture for advanced consumptives through conservative but timely interference that we offer the following remarks and conclusions.

As previously intimated, the most important factor in the treatment of pulmonary tuberculosis, as is true in most inflammatory conditions, is absolute and complete rest. If we are dealing with a peritonitis surgical procedure indicates the complete rest of the abdominal organs which we would probably bring about by opiates and withdrawal of fluids by mouth. In active pulmonary tuberculosis, we are dealing with an inflamed or ulcerated lung, but unfortunately, as is true with the heart, it is impossible to place the lung at absolute rest. For the maintenance of life, it is essential that the patient should continue to breathe. To bring about as complete rest as possible however, the modern hygienic treatment of tuberculosis requires complete rest in bed over periods of months or years together with complete mental and nervous rest attained through peaceful environment and protection of the patient from worry, anxiety or even immoderate amusement and entertainment. The object to be attained is to reduce the respirations to the smallest possible number and to make them as shallow as possible—a condition of definite localized rest. It is to attain this end, and incidentally other ends of lesser importance, that modern successful chest surgery has attained its first victories.

A great many years ago there was introduced an operative procedure known as artificial pneumothorax in which the affected lung is collapsed by introducing air into the pleural space of the affected side. You will recall that the pleura of one side constitutes a complete bag, one side of which is adherent to the chest wall and the other adherent to the lung. The introduction of air into this pleural space gradually expels the air from the lung which is finally firmly collapsed. The affected lung is thus placed in what may be regarded as an air splint, the pressure of which may be regulated by the addition of air from time to time.

Aside from the relatively complete rest given to the affected lung, in this way great benefit is also attained through the fact that the air pressure squeezes out of the lung the poisonous pus and caseous material which is responsible for the fever and other symptoms of tuberculous disease.

This operation experienced various vicissitudes and underwent periods of changing popularity, but today is accepted as a distinct part of the modern treatment of pulmonary tuberculosis.

Unfortunately, artificial pneumothorax or lung collapse is applicable to only a certain percentage of cases. It cannot be employed when both lungs are seriously diseased and it is likewise impossible when the two layers of the pleura are adherent through previous attacks of pleurisy. It has long been recognized by conscientious clinicians that artificial pneumothorax has given a new lease on life to thousands of patients who must otherwise have succumbed, but it has also been recognized that there are thousands more for whom the procedure is impracticable.

In those cases with marked unilateral involvement in which adhesions render lung collapse impossible, there has been suggested an operation known as extra-pleural thorocoplasty or the collapse of the affected lung by the removal of considerable sections of the ribs, reducing the diameter and capacity of the thorax on that side.

The removal of sections of the ribs not only produces a lessened anterior posterior dimension and reduces the lateral diameter and permits the raising of the diaphragm. These three factors give a splendid collapse.

It is not my intention at this time to go into the surgical technique of thorocoplasty; but rather to offer the practical deductions which have come from our experience of the past two

years and, as a result of these deductions to urge, not only upon surgeons and internists extensively engaged in tuberculosis work; but upon the rank and file of physicians the advantages to be gained from the employment of chest surgery in properly selected cases and the great advantage of employing lung compression, either by artificial pneumothorax or thorocoplasty, much earlier than these procedures have been used in the past.

At the time of presenting the first of our series of cases before this Society, in 1923, we shared more or less the general impression of the extreme danger in the operation on these cases; but increased experience tended to allay our apprehension so that we were quite ready to concur in the conclusions of Alexander, published in the *American Journal of Medical Sciences* during 1924, that the operative mortality should not exceed 2 per cent and that, with proper selection of cases and intelligent after-care, there should be a complete recovery of at least one-third of our cases even when dealing with the far advanced apparently hopeless individuals. In fact, we have come to feel that, even with these very critical cases, the mortality of 12 per cent during the first month after operation, cited by Alexander after a critical study of 1,024 cases operated in the United States and abroad between 1918 and 1923, is much higher than need be anticipated with the employment of our present methods.

The extremely interesting and practical conclusion derived from our later experience, however, is that, for the most part, our failures in results in obtaining a complete cure after thorocoplasty, lie in the failure of the heart, the majority of patients, after complete cessation of pulmonary activity, succumbing to myocarditis.

It will be borne in mind that, in the past, thorocoplasty and even artificial pneumothorax, have been regarded as remedies of last resort. In a large majority of sanatoria, patients with unilateral tuberculosis, even with marked activity and softening of the affected side, are kept at complete bed rest over many months until the clinical picture has become quite discouraging and it is apparent that something must be done to satisfy the disheartened patient and family. During these intervening months, often running into years, there may have occurred repeated pleurisy, with the formation of dense adhesions,

rendering compression by artificial pneumothorax impossible when it is finally undertaken. Even with the failure of artificial pneumothorax, and with the patient steadily losing ground, surgical interference is usually delayed until the case is in every way desperate and is then undertaken under the impression that death is inevitable without it. Under these conditions, it is surprising that the results of thorocoplasty are as brilliant as they are.

During the months or even years, in which the disease is steadily progressing, the patient is kept at complete rest with resultant flabbiness of all of the muscles including the heart and, at the same time, the individual is subjected to grave and continuous toxemia contributing to the cardiac inefficiency. As a result, the patient is finally presented for operation, a complete physical bankrupt aside from his pulmonary condition, and with a heart which is already showing ominous signs of failure.

It is not our contention that either artificial pneumothorax nor surgical interference should be advocated in that large percentage of cases in which rest in bed and sanatorium routine result in definite and appreciable improvement; but it is our belief that thousands of human lives are unnecessarily sacrificed by delaying lung compression of one kind or another, in the face of a losing fight and continued unilateral softening, as is done at the present time.

In other words, it is our present belief that lung compression by artificial pneumothorax should be undertaken in all cases of active, unilateral pulmonary tuberculosis, (in which definite contra-indications do not exist), as soon as it is demonstrated that activity increases or is undiminished after the employment of the conventional hygienic treatment over a moderate length of time; and it is our further belief that, when artificial pneumothorax is proven impracticable or impossible through pleural adhesion, thorocoplasty should be given immediate serious consideration. We are satisfied that, through such a program, with an operation which need not have much higher fatality in experienced hands than an appendectomy, the percentage of complete cures will be tremendously increased and the mortality, subsequently occurring on account of heart failure, may be largely obviated. In the words of Alexander, "In suitable cases the operation should be performed as soon as artificial

pneumothorax has proven itself ineffective; procrastination may rob these patients of an excellent chance of complete cure."

Unfortunately, forehandedness and prevention of disaster are not applicable to the great army of neglected consumptives who are already with us. For this large group of patients, otherwise hopelessly incurable, surgical interference offers the one remaining chance and, in conclusion, I should like to suggest that, in the light of our present knowledge, it is unforgivable to relegate to the ranks of the incurable any tuberculous patient, however advanced his condition may be, without at least giving consideration to what hope may be offered through the joint offices of the internist, familiar with thoracic conditions, and the surgeon.

While tuberculous infections are responsible for most major chest surgery and is done generally on the chest wall occasionally conditions, such as foreign bodies, lung abscesses, or tumors within the chest wall require an extensive amount of surgery done within the chest and it is upon this phase that I want very briefly to draw your attention, discontinuing from this point all conditions attributable to tuberculous. In this class of cases in the past we have hesitated on account of the extreme hazard in entering the thoracic cavity in any major surgical procedure. The impression is largely dissipated in our own experience when the chest is entered with the full and intelligent conception of the anatomic and physiologic conditions to be encountered.

These operations as described many years ago have been performed with various modifications by numerous surgeons, but have always been fraught with the utmost danger on account of the changes in pressure on entering the thorax tending to embarrass the circulation to an extent which is exceedingly serious in the presence of pre-existing diseases of the heart or of the larger vessels. Failure to safeguard the patient against these sudden changes had led to the great majority of failures and disasters in thoracic surgery of the past. Sudden death on the operating table, gradual failure from valvular pneumothorax, embolism and suffocation have been noted with far too great frequency, while not infrequent deaths from causes little understood in the past have been ascribed to a vague and indefinite thing known as pleural shock.

These disturbances are distinctly due to sud-

den changes in pressure and not to a restriction of the respiratory function as has been believed in the past, for it is recognized that the body is supplied with excess lung capacity and that considerably more than half of it may be destroyed with little or no disturbance. One lung is sufficient to ordinary life and work and half of one lung will support life in comparative comfort.

To overcome these changes in the past, there have been devised elaborate and complicated methods of operating on these cases under artificial conditions, all of which have proven relatively unsatisfactory.

In our experience we have found that the preliminary collapse of the lung by artificial pneumothorax will pave the way for a circulatory balance under changed conditions of pressure, eliminating so-called pleural shock and other threatening conditions.

Whenever it has been in any way possible, we have brought about a complete or partial lung collapse and in the after-care of the patient we have endeavored to maintain constant pressure on the side operated on, thereby reducing the chance of hemorrhage and of the accumulation of post-operative fluid as well as preventing the more serious circulatory and pressure phenomenon.

With preliminary lung compression which I believe is original with us and with certain modifications in operative technique, our own experience not only in extrapleural thorocoplasty, but in other major operations of the chest give decided color to the prophecy that chest surgery will become one of the very interesting and relatively safe fields of surgical endeavor during the next decade or two.

DR. H. H. COLE, Springfield: There are two or three little points that I think should be emphasized. This operation of producing localized rest goes back about a century and a half as far as we can determine and it can be gotten at in a number of ways. When you come down to the last analysis rest in bed is the easiest means of producing it. It has been determined by a number of observers that in tuberculous individuals reducing the respiration down to 8 or 10 per minute has proved a distinct advantage. We have had two or three patients who could reduce their respirations regularly over an hour or two at a time three or four times a day. That work has not gone very far and I am not prepared to give any conclusion.

Then we got the idea of using sand bags and that is also a very old method of producing localized rest in the lung. I think after all the value of the old ice

bag treatment of tuberculosis did the same thing. Then we come to the idea of strapping the chest to produce a more or less unilateral reduction in breathing such as is now done for pleurisy. A little later there was brought out the operation of cutting or pinching the phrenic nerve to allow the diaphragm to rise on this side, producing localized unilateral rest. It gives about 40 per cent reduction of movement and therefore considerable less lung volume. Then comes artificial pneumothorax. This was done in England about a century ago for hemorrhage and it is still being done for this condition. During the last ten years artificial pneumothorax has been used for direct treatment without regard to hemorrhage in unilateral cases. We have found that in 50 per cent of the cases where artificial pneumothorax was tried that adhesions inside the chest prevented the proper use of the gas. Bilateral pneumothorax gives some relief but there is in a sense more danger of tearing adhesions and producing trouble in the lung.

Then thoracoplasty was brought out and it has had a rather stormy course up and down. They tried the localized operation, that is, cutting a window over the cavity and replanting fat beneath the pleural space. Finally Sauerbruch brought the operation up to the point where it is being used today. A number of operations have been devised but cutting at the angle of the rib is the key to the situation. If you cut the rib at the posterior angle the entire chest wall will fall because the angle of the ribs controls the whole. We take out in the beginning about five or six sections of the lower ribs posteriorly down to the eleventh about two to four inches of each rib at the first sitting. Then two or three weeks later as the patient improves we go in and take out the remaining sections to the apex. If you take out the upper first and leave in the lower, then the patient is breathing with the lower part of the chest and what he does is to suck the pus out of the cavity and into a bronchus and then back into the lung and he gets a pneumonia. If it is a basal cavity the apex should be immobilized first, if it is the hilus the base should first be immobilized. Now we collapse the lower half of the chest up to about the fifth rib and then at the second sitting we go in and get a beautiful collapse. I do not think it is as complete as pneumothorax but in the collected cases reported by Alexander they obtained 30 per cent cures over five years. Our series is too young so we are not sure but it has a much wider field of usefulness. An important point is the removal of a section of the first rib. If this is neglected a large factor in cure is lost.

DR. DON DEAL, Springfield (closing the discussion): I want to go over one point. There is no such thing as pleural shock; symptoms are produced by the sudden change of pressure. If you do a preliminary pneumothorax there is no shock resulting from opening the chest. The operation done here has a very low mortality rate and is done in two stages. It is not necessary to remove a great extent of ribs. The compression is not limited by the two ends of ribs coming together.

PROGRESS IN THORACIC SURGERY*

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Infection and new growths constitute the greater proportion of disease conditions amenable to surgical treatment. The thorax is perhaps as frequently the seat of such lesions as any other region of the body, but the surgical treatment of its lesions remains relatively undeveloped. The reason lies very largely in the fact that there are special problems in thoracic surgery which differ fundamentally from those of other parts. Antisepsis and anesthesia were the basic requirements for the development of surgery in general and of abdominal surgery in particular. The special problems in thoracic surgery are inherent to its structural and functional relationships. The thoracic organs are encompassed by a bony framework which makes them relatively inaccessible. The thorax, in addition to containing the great vessels and important nerves, is the seat of two of the three vital organs which constitute "the tripod of life." Many of the organs of the body may be entirely dispensed with. The function of the gastro-intestinal tract may be suspended for days, but to interfere with the heart or lungs even momentarily threatens life. The diagnostic difficulties are often great and the exploratory operation for the purposes of diagnosis as compared with its use in abdominal surgery is of very limited application. The technical problems involved in such operations as drainage of mediastinal or pericardial suppuration, or resection of the lung or esophagus are baffling, and special procedures involving the use of differential pressure anesthesia or the endoscope, require expert knowledge and skill. Thoracic disease frequently reduces the patient to such a critical condition as to preclude an operation of any magnitude and in a large proportion of chronic cases the patient presents himself for surgical treatment after irreparable damage has been done. Partly due to these inherent difficulties of thoracic surgery and partly because of the absorbing interest in the less difficult, more rapidly developing and more remunerative fields there was a general apathy with respect

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to thoracic surgery until the urgency of the Great War and of the streptococcus pandemic compelled consideration of its problems. The interest and impetus to the development of thoracic surgery so aroused has been largely sustained.

Even though the development of thoracic surgery has been slow, real progress has been made. Even a brief and fragmentary review of advance along fundamental lines, as well as in the treatment of specific conditions substantiates this statement. We have begun to realize the importance of prevention and of early diagnosis and efficient treatment. We have added to our knowledge of pathology of the earlier stages of disease processes during which it is still amenable to surgical treatment and we have learned to better correlate symptoms and pathology. We have established certain fundamental principles for our guidance in treatment. We are learning to appreciate the value of pre-operative preparation of the patient, such as rest, diet, postural drainage, and antiseptic solution irrigation; of the vital capacity test as a measure of the patient's condition as an operative risk and as a criterion of the results of operation. A clearer differentiation of pathological condition makes possible a better selection of operative treatment. Necropsy findings following unexpected fatalities have brought home to us the important fact that a chronic process may have damaged vital organs, particularly the heart and kidneys, far beyond any clinical manifestations of such damage and has brought home to us the realization of the safeguard of a several stage operation.

Among methods of treatment that have developed may be mentioned regional and differential pressure anesthesia, artificial pneumothorax collapse of the lung, phrenicotomy, extrapleural thoracoplasty, posterior extrapleural mediastinotomy, the combined thoraco-abdominal pericardiotomy and lobectomy. The military surgery of the great war brought out important methods for localization and extraction of foreign bodies in the lung, the closed method and antiseptic solution irrigation of empyema, the prevention and treatment of hemothorax, the value of combined thoraco-abdominal approach in cases of injury in the region of the diaphragm, and emphasized the extraordinary re-

sistance to pneumothorax of healthy young individuals as contrasted with the appalling fatality that followed pneumothorax incident to the small opening for drainage of an acute streptococcus empyema in the case of critically ill toxic patients.

A brief review of present methods of treatment of the commoner thoracic disease conditions and results obtained affords specific examples of progress.

Empyema: Up to a few years ago the prevailing conception regarding the treatment of empyema could be summed up in the simple formula "rib resection and drainage." The forbidding mortality following this treatment during the streptococcus epidemic rudely shattered this complacent conception. We now recognize that early in the acute streptococcus empyema rib resection and open drainage is absolutely unjustifiable. Repeated aspiration or the closed method of drainage only are permissible in the early stages.

By the same token the closed method of drainage is indicated in a critically ill patient suffering from any type of acute empyema, particularly in its incipient stage. This operation performed under local anesthesia on the patient undisturbed in his own bed, replacing a portion of the pus aspirated with normal saline or Dakin's solution, will tide over the crisis in case of patients that would not survive the ordeal of being transported to the operating room, general anesthesia, the sudden evacuation of pus and open pneumothorax. In any case of acute empyema except in the presence of a large bronchial fistula, the closed method of drainage combined with antiseptic solution irrigation, in my experience, has yielded better results than the open operation. If efficient irrigation cannot be arranged for at regular intervals of about every two hours during the day, and two or three times at night the open method of drainage combined with such irrigation as can be arranged for is preferable.

In chronic empyema we have arrived at a much clearer understanding of causation and prevention, a fuller knowledge of pathology and better methods of treatment. In a series of three hundred and ten cases at the Mayo Clinic, late diagnosis, from three months to ten years after the onset of symptoms, was the chief cause

of chronicity in 23 per cent. Inadequate drainage usually with respect to the length of time drainage was kept up was the chief cause in more than fifty per cent. Drainage must be kept up as long as a cavity persists and pus forms. The fact that the drainage opening has healed is in no sense an indication of healing of the empyema cavity. In many such cases the cavity will persist for months or years before the pus breaks through the chest wall or into a bronchus. Foreign bodies in the cavity and fixation and fibrosis of the lung are other causes of chronicity. In a small group of cases empyema will recur after years of complete healing. Such recurrence is due to a persistent infection in the thickened pleura or the recurrence of a healed bronchial fistula. In such cases thorough excision of the thickened pleura or obliteration of the bronchial fistula is necessary to a permanent cure.

Greatly improved results in the treatment of chronic empyema both as to conservation of structure and function as well as a much lowered mortality has followed the preliminary antiseptic solution irrigation and the several stage operation. By a combination of these methods, large cavities of long standing have been reduced from fifty to ninety-five per cent in capacity, thereby greatly conserving structure and function, and the mortality following operation for large cavities that have persisted has been reduced to under two per cent. This low mortality includes cases with tuberculosis, and those with extensive secondary damage to vital organs from the prolonged suppuration.

Tuberculosis empyemas are more common than is generally recognized, comprising fifteen to twenty per cent of the cases that I observed at the Mayo Clinic. Open drainage does great harm to patients with a sterile tuberculous exudate whether serous or purulent, because of the secondary infection that invariably follows. Drainage alone never results in healing and the secondary infection increases greatly the difficulties of further treatment. In any case of suspected empyema giving a history of a preceding idiopathic pleurisy with effusion, of so-called "primary empyema," or in which there are other evidences of tuberculosis, the exudate should be aspirated and cultured. If the exudate proves to be sterile open drainage should not be insti-

tuted. The exudate may be aspirated repeatedly to relieve mechanical embarrassment and if the exudate persistently recurs an extrapleural thoracoplasty should be done for the collapse of the cavity.

Most cases of chronic tuberculous empyema which I have observed have had the misfortune to have been drained and so secondarily infected. In such cases preliminary irrigation with saline solution, if the pleurae are not thickened or with Dakin's, or other antiseptic solution if they are thickened, followed by a several stage plastic operation, will result in a cure in practically all cases, except those with an active progressive tubercular lesion. In cases with very large cavity and complete lung collapse I have performed first a several stage extrapleural collapse and later a resection of as much of the parietal pleura as necessary to secure complete healing.

Pulmonary suppuration: Pulmonary suppuration includes abscess and bronchiectasis and the combined lesions of abscess and bronchiectasis. Progress has been made in the studies of prevention, etiology, pathology, and in the better correlation of symptoms and lesion, resulting in the selection of operation more suited to the pathology present. In acute abscess expectant treatment, including bronchoscopic lavage, pneumothorax collapse, drainage, lobectomy and cautery extirpation, are advocated. Each has its indication but no one form of treatment is suitable to all. Expectant treatment including bronchoscopic lavage and pneumothorax collapse is indicated in cases of centrally located abscess. In these cases the nearest exit for the pus is through a large bronchus. Drainage through the chest wall is difficult and the danger of hemorrhage is great. This is the type of abscess that most frequently progresses to a spontaneous cure. In case of peripherally situated abscess a spontaneous cure may result and such cases should be treated expectantly if the symptoms and constitutional reaction is mild and the patient is improving. If there is no definite improvement during the period of a few weeks, or if the sputum is profuse and foul, and the patient is acutely ill and losing ground, drainage should be instituted at once. The nearest exit for the pus in peripherally situated abscess is through the chest wall.

Drainage through the bronchus is in the great majority of cases so incomplete that chronicity rather than healing results from prolonged expectant treatment. Bronchoscopic lavage in these cases is illogical, and pneumothorax collapse is often impossible on account of adhesions. If collapse is possible and is brought about, there is risk of perforation of the abscess into the pleural cavity and a resulting empyema which is always a serious complication.

In case pleural adhesions are present drainage is instituted by a single stage operation, following accurate localization of the pus with the aspirating needle. If adhesions are absent, incomplete, or in case of doubt as to the presence of adhesions, a two stage operation affords the greatest protection against infection of the pleural cavity and should be carried out unless the drainage is so urgent that the risk of empyema becomes the lesser evil. Accurate localization of the abscess and a sufficiently large window over it to allow suturing of the lung to the parietal pleura around the abscess are important to successful treatment. In order to lessen pain and to steady the chest wall so that the patient can evacuate the purulent sputum, the ribs are not resected at the first stage operation, but left in place as splints until the second operation. Suturing the lung around and under the ribs denuded of periosteum is readily performed. The abscess should be explored for secondary pockets and the drainage opening kept patent until the abscess has healed.

In chronic abscess further expectant or palliative treatment is obviously contraindicated. In these cases drainage operation should be the first step in treatment. If a well defined cavity is present, improvement will always follow drainage and a residual persistent cavity can be later obliterated by a plastic operation.

In some chronic cases repeated searching exploratory aspiration in the involved area, as localized by the physical findings and roentgenogram, will yield at most only a few drops of pus. Exploratory incision will reveal a dense sclerosis, the surfaces exposed by the incision being honeycombed by multiple abscesses and sinuses. A few such cases that have come to necropsy have shown similar findings throughout the whole involved portion of the lung. For such a condition extirpation of the diseased por-

tion of the lung offers the only hope of a cure. A cautery lobectomy in stages, in my opinion, offers the most to these cases, but the risk of death on the table from embolus and of a fatal secondary hemorrhage must be recognized.

Bronchiectasis: The treatment of bronchiectasis has been very discouraging and has been characterized as the most thankless task in the whole domain of surgery. Drainage, bronchoscopic lavage, pneumothorax collapse, extrapleural thoracoplasty, and lobectomy have been attempted and abandoned because of the failure of these methods to produce results or because of the high mortality following the radical types of operation. It is therefore particularly gratifying to be able to record very encouraging progress in its treatment. This progress has been the result in part of the better recognition of its varied pathology, particularly as to its distribution, and also to the selection of a several stage operation suited to the pathology present.

Bronchiectasis may be strictly localized, or diffuse with respect to one lobe or one lung, or it may be bilateral. In a series of three hundred and eighteen cases at the Mayo Clinic, it was diagnosed as unilateral in 36 per cent. Most cases first observed after years of symptoms were probably unilateral and would have been operable cases following early recognition and prompt treatment. Cases with bilateral involvement are obviously unsuited to any form of treatment, but their recognition may be a matter of a great difficulty and uncertainty. In case of some patients producing large amounts of purulent sputum the physical and roentgenological findings may fail to localize the disease or to determine whether the pus comes from one lung or the other or from both. Bronchoscopy may also leave the localization in considerable doubt. In such cases I have used a pneumothorax collapse of the lung chiefly suspected as a therapeutic test. If the symptoms clear up the case is considered suitable for an extrapleural collapse, otherwise not.

The first consideration as to treatment is the possible presence of an etiological foreign body. Bronchoscopic removal of a foreign body in a bronchus will bring about a cure in recent cases without extensive lung involvement.

For diffuse unilateral bronchiectasis an extrapleural collapse in stages has, in my experience,

proven safe and effective and this is the only operation which so far has proved both safe and effective. The operation involves the complete removal of the ribs from their articulation with the transverse process posteriorly to the costochondral junction anteriorly. Usually the third to the eleventh ribs inclusive are removed and in five or six stages. The operation is done under combined nerve block and gas-oxygen anesthesia. After the resection of the ribs posteriorly the nerves are injected under direct vision with a few drops of 95 per cent alcohol. This accomplishes a threefold purpose. It makes the convalescence relatively painless, a very important consideration in a several stage operation. The coughing is made relatively painless which is important in the prevention of postoperative retention of sputum and the consequent risk of flooding of the bronchial tract and resulting pneumonia, and the anesthesia persists throughout and beyond the time necessary for the complete resection so that the lateral and anterior resection of the ribs can be done in a relatively anesthetic field. Usually the ribs are resected first, posteriorly in two stages, removing eight to ten centimeter segments. The lower lateral segments are next resected in toto, then the upper anterior, and lastly the remaining upper median segments through a mid-axillary incision. The operations are done from one to two weeks apart, depending on the condition of the patient.

Thirty-four patients have been operated upon during the last four years. There has been no post-operative mortality. All the patients have been relieved of symptoms, the amount of sputum decreasing from fifty to ninety-five per cent or more. One patient died later, a case of actinomycotic bronchiectasis, not recognized as such until after the operation had been completed, when sinuses developed in the chest wall. The improvement has been constant in all other cases.

There is a distinct group of cases of combined abscess and bronchiectasis which are most baffling from the standpoint of both diagnosis and treatment. The physical findings and x-ray in these cases show extensive lung involvement, but it is impossible to determine what proportion of the changes are due to multiple discreet abscesses and what part to fibrotic changes or how

extensive the associated bronchiectasis may be. The pleura is also often thickened in these cases, clouding the roentgenological plate and thereby further obscuring the findings or entirely blotting out all lung markings. The severity of the symptoms of suppuration and the amount and fetor of the sputum are the only criteria of the extent and gravity of the process.

The choice of treatment in these cases is very limited and the risk of any form of radical treatment is great. Lobectomy, cautery extirpation and extra-pleural collapse are the only alternatives. Most cases are in too poor condition for lobectomy. Partial cautery lobectomy involving the extirpation of the larger portion of a lung seems an almost equally formidable operation.

Pulmonary tuberculosis: Generally speaking, the principle of rest in the treatment of tuberculosis is well established. In case of pulmonary tuberculosis this is achieved by collapse of the lung. If the lung is not adherent to the parietal pleura collapse is easily accomplished by artificial pneumothorax. If there are extensive adhesions the lung can be collapsed by thoracoplasty. One consideration of that has prevented a more extensive adoption of this method it has been the assumption that it is not indicated if there is any definite evidence of bilateral involvement. It has been definitely shown, however, in some cases of bilateral involvement that a lesion and even a fair sized cavity in the opposite lung has healed following thoracoplasty. If this proves to be the rule as it has been shown to be in the case of extirpation of one of two bilateral organs, as for example in case of nephrectomy for bilateral renal tuberculosis, a wide field of usefulness will develop for thoracoplasty in tuberculosis.

Bronchial fistulae: Bronchial fistulae secondary to empyema, abscesses or bronchiectasis complicate the treatment of the primary condition and present a special problem in the treatment of the bronchial fistula. Much progress has been made in the matter of healing the bronchial fistulas, the first essential to the cure of the primary condition. Small, single, or multiple recent fistulas complicating empyema will usually heal spontaneously, following effective drainage and irrigation of the empyema cavity. The majority of large, single, or multiple fistulas can

be healed by persistent silver nitrate cautery which destroys the endothelium, permitting the formation of granulations and scar tissue contractions. Only exceptionally in my experience has it been necessary to do plastic operations such as decortication and suture of a bronchus or muscle or skin plasties.

Bronchial fistulas that discharge any considerable amount of purulent material should not be closed. This closure will result in the purulent discharge being coughed up and involves a distinct risk of brain abscess. I have lost one patient from such a complication.

Progress has also been made in the treatment of other conditions such as new growths of the chest wall, lung and esophagus, of mediastinal, pericardial, and subphrenic suppuration, of benign lesions of the esophagus, and of diaphragmatic hernia, and eventration of the diaphragm. We are beginning to realize that chondroma is a potentially malignant tumor in that it recurs, metastasizes and kills. Early radical extirpation is a relatively safe and curative operation. Radical resection for early sarcoma prolongs life and has been curative in some cases. Lobectomy for malignant tumor of the lung in a few cases has resulted in a lasting cure. Resection of the thoracic esophagus and the cardia for carcinoma has been successfully performed and has resulted in at least one permanent cure. Extensive mediastinal suppuration has been generally considered to be uniformly fatal, but in the last two years I have had three cases with from a half to one liter of pus in the posterior mediastinum following exploration for malignant growth that have recovered following Dakin's solution irrigation. The closed method of drainage and irrigation for suppurative pericarditis has resulted in a cure. Possibly this method may obviate the difficulty of efficient drainage of the posterior cul de sac. Encouraging results have followed earlier diagnosis and a two stage operation for subphrenic abscess. The silk thread and bougie dilatation technique has yielded remarkably satisfactory results in cardiospasm and cicatricial stricture of the esophagus. We are learning to better differentiate the types of diaphragmatic hernia and the type of operation suited to each. Early diagnosis and operation before strangulation has occurred has greatly lowered the operative mortality. Lorche has recently described

a new operation for eventration of the diaphragm which seems rational and feasible. Ganglionectomy for angina pectoris has been reported to have yielded favorable results. The approach to the cardiac valves as used by Cutter and the cardioscope of Allen suggests the possibility of a new field of intracardiac surgery. The Trendelenberg operation for removing a pulmonary embolus has been successfully performed.

It may be said, therefore, that although progress in thoracic surgery is beset with special difficulties and although this field remains relatively undeveloped the fact remains that substantial progress is being made and what has already been accomplished together with the awakened interest in this field of surgery may be confidently expected to furnish the impetus to more rapid and important advance in the near future.

GUNSHOT WOUND OF THE HEART— REPAIR UNDER LOCAL ANESTHESIA WITH COMPLETE RECOVERY OF THE PATIENT

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The successful treatment of wounds of the heart is a comparatively recent achievement in the field of modern surgery and shatters the old belief that the heart is a forbidden field for surgical procedures. Thirty years have not yet elapsed since Del Vecchio⁷ first demonstrated experimentally on animals that wounds of the heart may be successfully sutured, and Farina,⁸ in March, 1896, was the first to attempt the suture of a human heart. The patient survived the operation but died a few days later from infection of the pericardium and pleura. Capelen² also attempted the suture of a wound of the human heart in 1896, but his patient also died of infection a few days later. Rehn^{20 21} was the next to attempt this operation and reported the first successful suture of a cardiac wound with complete recovery of the patient in September, 1896. Since then numerous attempts

have been made in this field and the interest in cardiac surgery has become so lively that Ballance¹ estimates that there are now about 400 such cases reported in the literature.

This new interest in the surgery of the heart is also due in great part to the discovery that the heart has a comparatively good tolerance to manipulation (R. Matas¹⁷, W. R. Smith²⁴), a fact which is demonstrated by statistical evidence that from ten to fifteen per cent of cardiac injuries recover spontaneously with expectant treatment (Loison¹⁶, G. Fischer⁹, W. S. Schneider²²). The degree of manipulation to which the human heart may be subjected with impunity is demonstrated by the remarkable cases



Fig. 1. X-ray of the chest of patient after self-inflicted gunshot wound of the heart. The bullet is seen in the posterior aspect of the heart.

reported by Davenport⁶ and Quenue¹⁹ in which the left coronary artery had to be ligated during the operation with recovery of both patients. The tolerance of the heart is further shown by the cases of Swearingen²⁶ and Shaw²³, Cunningham and Manhof who report the unexpected finding on x-ray examination of bullets in the heart with apparently no discomfort to the patients. E. Hoffmann¹² estimates that there are about fifty such case reports of foreign body within the heart without apparent injurious effect to the persons harboring the projectiles.

The clinical manifestations which may be produced by wounds of the heart are extremely variable and uncertain (Hartmann-Keppel¹⁰, Costantini⁴, Hesse¹¹). All symptoms may be

absent or may develop in a few days or there may be a most dramatic picture of interference with the circulation immediately after the injury. The most common signs and symptoms of a well developed case of cardiac injury are shock, the signs of internal hemorrhage, dyspnea, cyanosis, rapid pulse, enlarged area of cardiac dullness, faint heart tones, pallor and a peculiar murmur like that of the wheel of a mill if air has entered the pericardial sac. A sign which Costantini and Viogt⁵ have emphasized very much is a large, immobile cardiac shadow on fluoroscopic examination. The complications are chiefly dependent on the presence of infection (C. Ballance¹, A. W. Collins³) and H. Klose¹⁴ reports the possibility of the blood clot becoming loose after the heart begins to beat stronger, with the chance of the clot becoming displaced. A marked shattering of the heart is possible if the bullet enters during the period when the heart is filled with blood due to the transmission of the force in all directions (Strassmann²⁵). Rupture or aneurysm of the heart has occurred some time after the injury when the scar tissue or sutures give way (H. Klose¹⁵).

The results of operation for cardiac injuries must be considered as favorable. Ballance¹ from a study of 58 cardiac injuries received during the last war was able to report 44 recoveries and 14 deaths. Hesse¹¹ in his masterful work on 48 cases of cardiac injuries operated on, reports a mortality of 69%. This author lays great stress on early operation and points out that his patients operated on within three hours showed a mortality of 35% while those who were delayed beyond three hours had a mortality rate of 86%. There are not many reports of these patients at some distant date after the operation, but Jones¹³ reported a patient examined seven years after the injury who was in a good state of health, and Proust¹⁸ reported a patient examined physically by x-ray and with electro-cardiogram ten years after the operation and could find no evidence of any abnormality.

In view of the interest awakened in cardiac surgery and the excellent result possible after immediate operation in wounds of the heart, we wish to report a case of gunshot wound of the heart inflicted in a very curious manner and successfully operated upon under local anesthe-

sia. Subsequent examination physically and with the electrocardiogram showed a perfect result in so far as could be determined by these methods.

Case. 1. The patient, M.P., aged 37, a laborer, was admitted to the Cook County Hospital December 25, 1924, as an emergency case of gunshot wound of the heart. He had become despondent and decided to commit suicide about three and a half hours before being admitted to the hospital. He drove a piece of file about two inches long into the lead part of a bullet and packed this tightly together with some sulfur and black gunpowder into a piece of iron pipe about one foot long. He held the pipe against the upper left portion of his abdomen and caused an explosion by inserting a piece of redhot wire in the free end of the pipe. The patient complained of some pain in his upper abdominal region but would not give any further history. Examination showed a temperature of 98.6, pulse 122 and respirations 26 per minute. The area of cardiac dullness was not enlarged but a "regular irregularity" was present, the heart missing about every sixth beat. Examination of the abdomen revealed a small punctured wound about 4 mm. in diameter and located about 6 cm from the umbilicus. There were no tender or rigid areas or evidences of fluid in the abdomen. The pain in the abdomen and in the region of the heart soon became more severe and an x-ray examination was decided upon. A foreign body about two inches long was seen in the area of the cardiac shadow and fluoroscopic examination showed this foreign body to move with each beat of the heart.

The patient was immediately prepared for operation where the following procedure was carried out under local anesthesia. A flap was made with the nipple in the center and the base towards the axilla. A horizontal incision was then made in the sixth interspace connecting one angle of the flap and another at the fourth interspace. The third and sixth ribs and the left border of the sternum were then exposed, about five inches of the fifth rib was removed and the sixth rib sawed through in order to obtain a good exposure. The inner margin of the flap was then freed and the pleura opened, allowing the removal of a large blood clot. The pericardial wound was then enlarged, the blood from this cavity removed, bleeding points stopped and the projectile removed from the posterior aspect of the left ventricular wall. The pericardium was then sutured with continuous catgut and the superficial layers closed with silk worm gut. No drainage was made. In view of the wound of entrance in the upper abdomen an exploratory incision was made in this region but nothing abnormal except the track of the bullet was seen. The operative wound was closed with a small gutta percha drain in place.

The patient made an uneventful recovery and was discharged in an apparently good state of health

on January 9, 1924, fifteen days after the operation. X-ray examination on the day before his discharge showed a definite enlargement of the cardiac shadow, but no evidence of fluid was seen either in the pericardial or pleural cavities. An electrocardiographic examination made on the same day showed a very slight degree of sinus arrhythmia, a P-R interval of 0.12 seconds, a cycle duration of 0.64 seconds, corresponding to a rate of 93 per minute. P and T were isoelectric in lead III, R was notched in lead III but QRS measured less than 0.08 of a second which contra indicated a true bundle branch block. T in lead II was very low and suggestive of inversion; there was marked muscular tremor and the electric axis was 53 normal.

From the foregoing it is evident that the patient made an uneventful and practically complete recovery after operation under local anesthesia for removal of a foreign body from the heart inflicted



Fig. 2. Actual size of projectile removed from heart of patient with complete recovery.

by a gunshot wound about six hours before operation. It is difficult to say whether the cardiac enlargement seen with the x-ray on the day of discharge from the hospital existed before the injury or was the result of the trauma.

Resume.

1. A case of gunshot wound of the heart is reported which was inflicted in a very curious manner.

2. Operation under local anesthesia six hours after the injury resulted in complete cure as far as could be determined and the patient was discharged from the hospital fifteen days after operation.

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THE VALUE OF GASTRO-ENTEROSTOMY IN THE TREATMENT OF DUODENAL ULCER*

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On no subject with which the writer is familiar is such a divergence of opinion expressed as is found in authoritative statements on the relative merits of gastro-enterostomy and other forms of treatment for duodenal ulcer. Every large medical and surgical clinic in the world has ample opportunity to observe this disease. Hardly a year goes by that it is not made the subject of discussion at some important medical or surgical conference. On such occasions there is a recital of our lack of knowledge concerning the true etiology of the disease, with a rehearsal of the theoretical causal factors—none of which has been proved. There is discussion as to the relative value of medical or surgical, or combined treatment, with the optimists claiming 90-100% cures, and holding that gastro-enterostomy is among the most satisfactory curative agencies known to surgery, and others finding dissatisfaction with every method of treatment.

Out of all this testimony one has difficulty in disentangling the kernels of truth, as he becomes lost in a maze of contradictory evidence. Duodenal or post-pyloric ulcer only is under discussion and it is needful to emphasize that the pyloric ring is a definite and important dividing line, a fact which is too often overlooked.

Gastro-enterostomy was first applied to the treatment of pyloric obstruction nearly thirty-five years ago, and was devised for the purpose of obtaining an outlet to an otherwise closed viscus. The results were highly satisfactory, and

in spite of vicious circle, intestinal obstruction, hemorrhage and other complications, it came immediately into general favor which was well deserved.

At that time pyloric ulcers in large number remained untreated until huge obstructing cicatrices developed, so that relief was demanded, not from the ulcer itself, but from this complicating lesion. When for any reason a second operation was performed, the surgeon was struck with the fact that the presence of the operative atoma had not only relieved the obstruction but had also made the callous mass to disappear. Hence arose the hope that a gastro-enterostomy was curative of the duodenal ulcer itself. Then followed a long abuse of the operation, in which it was done not only when a duodenal ulcer was present, but when the symptoms of this lesion were present, even though at operation no ulcer could be demonstrated. The experience of having an ulcer exhibited for inspection, which was purely an artefact, caused by blanching of the tissue due to traction or muscular spasm, was not uncommon. This period placed upon gastro-enterostomy an undeserved odium. The operation was called upon to relieve symptoms which were unrelated to a known lesion. However, there were gradually developed improvements in technique, which greatly added to the efficiency of the operation in properly selected cases. Thus the operation became standardized both in its indication and its technique, so that during the past decade only minor changes have been advocated. Opinions are still at variance on many of these, but in all probability they are not of first importance in determining the outcome.

Requisites are—a stoma of approximately two inches in length, placed in the posterior wall of the motor part of the stomach, that is in or near the antrum, and as near as possible to the greater curvature. The suturing of the opening in the mesocolon on the gastric side of the anastomosis prevents herniation. Absorbable suture material is used throughout. The jejunal loop must be short and the efferent limb must hang free. Disputed joints include the direction of the gastric incision—horizontal, vertical, or oblique in one or the other direction, the use of retention clamps—and the careful suture of the jejunal and gastric mucosae as a separate layer. This stage in the development of the operation may

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be said to correspond to the present decade, and therefore, in reaching a correct evaluation of the operation as at present used in the treatment of duodenal ulcer, one should confine the study to reports and material coming to hand within that time.

One important difference of opinion among operators during this period concerns the attempt to reproduce the condition for which gastro-enterostomy was first done, namely, a pyloric obstruction. In small non-obstructing duodenal ulcers, surgeons early began to find dissatisfaction with the results of simple gastro-enterostomy. They believed that the stoma failed to completely sidetrack the gastric contents from the ulcer site. To meet this need of protection to the ulcer, the operation of pyloric exclusion was added to the gastro-enterostomy. Eiselberg¹ devised the method of complete division of the pylorus, and infolding closure of the two ends. Girard,² Kelling,³ Mayo,⁴ Wilms,⁵ Berg,⁶ Brewer,⁷ and others, followed with various modifications. The operation became a recognized adjuvant to gastro-enterostomy in the treatment of duodenal ulcer, and was employed in many important clinics. Patterson,⁸ in a paper read before the Clinical Congress of Surgeons in Chicago in 1914, opposed this practice, and declared that "the occlusion of the pylorus is an unnecessary complication of gastro-jejunosomy and is based on erroneous pathology." Lewisohn⁹ in 1916 quotes this statement and adds the comment: "This opinion, however, is rather an isolated one"—and "in fact most surgeons agree that a simple gastro-jejunosomy will not permanently cure the disease." He concludes: "The vast majority of surgeons therefore agree that pyloric exclusion ought to be added to gastro-jejunosomy to insure the permanent cure of pyloric and duodenal ulcers." I am entirely in accord with the view that gastro-jejunosomy alone may not permanently cure duodenal ulcer, but question the view that pyloric exclusion should be added, and is a curative agent. I accept Patterson's teaching as quoted. Finsterer¹⁰ in the notes of his lectures given in this country, condemned pyloric exclusion and quoted Von Habere¹¹ as having discarded it because of the high incidence of gastro-jejunal ulcer as a sequela.

Sherren¹² in 1920 says pyloric occlusion does not add to the efficacy of gastro-jejunosomy, has

no bearing on the healing of the ulcer, or the continued potency of the stoma. Experimental and clinical evidence is abundant that a properly placed gastro-enterostomy permits emptying of the stomach through the stoma, rather than through the patent pylorus.

Hartmann¹³ in his paper before the American Surgical Association in 1914, admirably presented this evidence and concluded that a stoma placed in the motor portion of the stomach, that is the antrum, gave sufficient emptying of the stomach to protect the duodenal ulcer, while one in the fundus would not do so. The purpose in introducing the discussion on pyloric exclusion to show that surgeons found dissatisfaction in a simple gastro-enterostomy. The hope of bettering it by pyloric exclusion did not materialize, and gradually this supplement is losing favor.

Then followed an application of the observation that many cases of acute perforating duodenal ulcer seemed to be permanently cured by simple suture of the perforation. This led to the deliberate destruction of the ulcer by excision, cautery, or inversion. In conjunction a gastro-enterostomy was or was not performed. This adjuvant enjoys a very considerable popularity up to the present time, but its use is by no means universal, and I am unable to determine from the literature that its employment yields more satisfactory results than its omission.

Pinney,¹⁴ Flint,¹⁵ and Horsley¹⁶ frankly dislike gastro-jejunosomy as a curative measure for duodenal ulcer. We have their teaching favoring a pyloroplasty, with coincident excision of the ulcer. While this teaching has not been followed in most clinics, there are strong advocates of the pyloroplasty and its associated procedure gastro-duodenostomy.

Boyden¹⁷ makes this emphatic assertion: "There is probably no such well established and frequently performed operation which has been adhered to by the leaders of surgery with apologies as gastro-jejunosomy. It has long since been proven physiologically and mechanically non-operative, except in cases of pyloric stenosis." These statements were made in an advocacy of the Horsley operation with excision of the ulcer, as opposed to a gastro-enterostomy. In the discussion following his paper there was the usual differences of opinion expressed, which convince the reader that duodenal ulcer is not satisfactorily cured by gastro-enterostomy in the hands

of many surgeons. Wilensky¹⁸ in studying the functional results following gastro-enterostomy in 1922 says "For a number of years the operation of gastro-enterostomy has been gradually losing in favor, and at the present time dissatisfaction with the surgical procedure is approaching an extreme point." In this paper Wilensky concludes that the best *functional* results are obtained when a posterior gastro-enterostomy is made with a short jejunal loop by the use of the Murphy button, the stoma being close to the greater curvature and in the pyloric region of the stomach. His findings seem to show that the addition of a pyloric occlusion also was beneficial. The results are determined from roentgenological findings on gastric mobility and chemical studies in a fasting condition, and following the Ewald test breakfast and the Riegel test meal. He fails to comment on the clinical symptoms of the patients, but says, "These tables should not be interpreted as indicating in any way the number or percentage relationships of the cases cured or not cured." The use of the Murphy button is certainly not the choice in most clinics, and as pointed out above, pyloric exclusion is a definitely discarded procedure by many of the most experienced surgeons. Wilensky¹⁹ in an earlier paper (1918) reported another study. He states as follows on the results of pre-operative findings. "Ulcerating lesions in the stomach or duodenum are not necessarily accompanied with disturbances in the normal physiology of acid secretion." He further shows that when a disturbance is found, it bears no relation to the site, the size, character or age of the ulcerative process. The post-operative findings are equally inconclusive. White^{19A} studied a series of cases pre- and post-operatively on the sixth and eighteenth days. There was a definite reduction in acidity after the operation amounting to about one-half, but there was invariably less of a reduction at the later examination than at the earlier. He considers this lowering of acidity as a "rupture" of the vicious cycle, whereby healing takes place. No evidence is found in these studies that acidity is definitely and permanently lowered by the presence of the gastro-enterostomy. This opposes a belief held by many, that lowered acidity results and is a curative factor.

Smithies,²⁰ statistical analysis of 273 cases following gastro-enterostomy is instructive. He

found 216 patients showing some degree of post-operative pain or gastric disturbance, sufficient to prevent their being classified as well. A larger per cent. of these belonged to duodenal ulcer than to pyloric or gastric. It is fair to draw the conclusion from Smithies' studies that he was unable to definitely determine the cause of the symptoms complained of either by roentgenological or chemical study, in a very large number of patients. One fact stands out, namely, that gastro-enterostomy gives great relief for a certain time, but that a large per cent. sooner or later experience a recurrence of symptoms which can not be ignored by the patient or the surgeon who has undertaken the patient's relief.

Hutchison²¹ writing in the *British Medical Journal* in 1918 on the "Disappointments after Gastro-enterostomy" says "The operation may have relieved the patient of the devil of pain, but it has let in seven other devils which are about as disagreeable tenants." The complaints of such patients are various: there is a heavy feeling or distention in the epigastrium as if the stomach were too big, or "a feeling of emptiness, as if the food dropped straight down"—weakness, faintness, depression, failure to gain weight, etc. His explanation of these symptoms is vague, and he gives no information as to how they may be avoided or corrected. Moorehead,²² in discussing this paper, gives three causes for the disappointments. 1. Unhealed ulcers. 2. Marginal ulcers, which are much more common than believed (and usually reported). 3. Forcible contractions in a dilated pyloric pouch, which he believes arises from placing the stoma too far from the pylorus.

Hort²³ in the discussion, expresses the belief that all these symptoms can be prevented or cured by taking care of foci of infection, tonsils, teeth, etc., because these symptoms result from such infection, producing a recurrent crop of acute and healing ulcers.

The literature contains much further evidence that gastro-enterostomy as a cure for duodenal ulcer has been disappointing in the experience of many surgeons. It must be noted that this evidence comes almost entirely from surgeons and does not take cognizance of the rather more caustic comment that comes from the general internist and the non-operating gastro-enterologist. Their views are well summarized by

Brown²⁴ in his paper before the American Medical Association in 1922. He says "In my experience in the chronic group of cases, even without obstruction, surgery has been more effective and more permanent in its results in the majority of cases than medical treatment. Notably in cases where pyloroplasty, resection, or the Polya operation has been done. To me, gastro-enterostomy has always seemed peculiarly unphysiologic. I have rarely seen cases, except those of almost complete pyloric obstruction, in which it has been absolutely successful, and gastro-enterostomy has never seemed to me the operation of choice, but the operation of necessity. It is interesting to note that practically the same percentage of cures is claimed by the followers of each special scheme of diet, as by the followers of special surgical procedures. Each must be deluded as to these figures. Certainly from 75-90 per cent. of ulcers are not cured in the true sense of that word, by either medical or surgical procedures. Our clinics and consulting rooms are filled with patients suffering from recurrent symptoms after medical treatment, and with patients that report with the same or different symptoms after surgical therapy."

It is apparent that a considerable portion of the profession are not satisfied with a simple gastro-enterostomy as the treatment for duodenal ulcer. However, it is obvious that the evidence is not universally convincing, because gastro-enterostomy is still a daily procedure in the hands of experienced surgeons.

Moynihan²⁵ in 1919 says: "The operation of gastro-enterostomy in appropriate cases by competent operators is probably the most successful of all surgical procedures of equal magnitude." He attributes the disappointments and failures to many factors—(a) The operation has been performed for disorders other than gastric or duodenal ulcers. (b) Failure to remove other foci of infection within the abdomen, appendix, gall bladder—and above all failure to deal with the ulcer itself. Either the large vessels going to it should be ligated, or the ulcer should be infolded. He rarely excises the ulcer or resorts to pyloric occlusion or resection, "for the results of the simpler operation of gastro-enterostomy are hardly to be improved." (c) Defects in technique, of which he enumerates—1. Long loop. 2. Short loop, but efferent arm blocked by

kink or adhesions. 3. Recurrence of adhesions on the raw surface left after separating the jejunum from the surface of the mesocolon. 4. Rotation of jejunum on long axis. 5. Too small opening. 6. Badly placed opening; should reach to greater curvature whether vertical (as he refers), or oblique left to right or right to left, matter very little. 7. Hernia. 8. Use of non-absorbable suture. 9. Ventral hernia. (d) Late complications—1. Jejunal ulcer. 2. Cancer. In his conclusion he evinces an enthusiasm for gastro-enterostomy as a cure for duodenal ulcer.

Bevan²⁶ states that 90 per cent. of duodenal ulcers are cured by gastro-enterostomy, with 2 per cent. operative risk and 3 per cent. of marginal ulcer.

Mayo²⁷ finds satisfactory results in 90 per cent. of the gastro-enterostomies, but significantly believes that with increasing experience and knowledge the practice of excising certain types of duodenal ulcers and combining this with a pyloroplasty will become more general.

Balfour²⁸ quotes Sherren as having 92.8 per cent. of patients "perfectly well" after two years and as saying "patients who go for two years without symptoms never develop them later." Balfour reports 1,000 cases who had been operated on at least ten years previously and finds 83 per cent. with "relief from the symptoms for which the operation was performed." Yet there were 90 cases who still had pain—25 who showed a recurrence of vomiting—57 who showed a recurrence of hematemesis, melena, or both, and 35 who had a recurrence of the ulcer either in duodenum, stomach, or stoma—making a total of 207. Balfour states that only 22 of the 90 who had pain thought it necessary to return for examination, but this does not justify considering the remaining 88 as being "relieved of symptoms." This analysis may be misleading because some of the patients included may be suffering from more than one of the symptoms, and they may be included in two or more groups. Among the causes of disappointing results Balfour mentions failure to remove the appendix, young patients, the constitutional inferiority type of patient, a small ulcer without obstruction. The results are not so certain if a patient has had mild symptoms of short duration, low acids, and a small uncomplicated lesion. Such cases from a technical point of view are satisfactory for local excision of the lesion with

or without pyloroplasty, but experience in the Mayo Clinic has shown that the end results with these procedures are not definitely better than with gastro-enterostomy. Balfour advocates removal of the ulcer, however, when it is reasonably accessible. There seems to be an inconsistency in Balfour's reasoning concerning this. The results he believes are very satisfactory when the ulcer is not removed, but it should be removed when this can be easily done.

Peck,²⁹ in a paper presented before the New York Surgical Society in 1924, reported approximately 90 per cent. cures following gastro-enterostomy for duodenal ulcer. He protested against the more radical measures and he adds neither excision of the ulcer nor exclusion of the pylorus to the gastro-enterostomy. He presented cases illustrating cures of many years, who at the time of operation had harbored extensive indurated and chronically perforating ulcers. They were free from every symptom of digestive discomfort, though one patient had suffered from a hemorrhage six years following the operation, and two years prior to being exhibited. Peck explained in detail his technique and stated that it was rigidly adhered to in all cases. He claimed for it no advantage except that if the operation were always done in the same way the surgeon developed a mastery of technique, which he believed had much to do with obtaining uniformly good results. It is important to note that he uses a nearly vertical incision in the stomach, running downward from the right margin of the cardia. Thus the stoma lies proximal to the pyloric antrum. He also uses a through and through stitch traversing all layers. The discussion following this paper seemed to indicate that the members of the Society agreed with his conclusions, and that gastro-enterostomy had proved a satisfactory operation for duodenal ulcer in their hands.

I presented three cases in whom I had resected the first portion of the duodenum and the pyloric antrum for extensive induration and chronically perforating ulcers of that portion of the duodenum, followed by a gastro-enterostomy or a Polya repair. This procedure did not elicit favorable comment, and one was led to infer that the Society's opinion concurred with Dr. Peck's views.

One is forced to the questions, why this great diversity of opinion as to the value of gastro-

enterostomy in duodenal ulcer? Why do we find statements that "the operation has proved a failure," "is only done with apology," "causes a marked disturbance of gastric physiology," "must be combined with pyloric exclusion," "must include infolding of the ulcer or its excision," on the one hand; and on the other, statements that "no operation of equal magnitude gives better results," that 90 per cent. of the patients are absolutely free from symptoms and "in the remainder the discomforts may almost be considered as negligible"; that there is no need of pyloric exclusion which is "an unnecessary complication of gastro-jejunoscopy and is based on erroneous pathology?" Why do we find Moynihan,²⁵ Patterson,⁸ Mayo,²⁷ Bevan,²⁶ Deaver,³⁰ Peck,²⁹ Balfour,²⁸ — doing the operation constantly and with enthusiasm, and Finsterer,¹⁰ Haberer,¹¹ Finney,¹⁴ Horsley,¹⁶ Hutchison,²¹ Boyden,¹⁷ Flint¹⁵—discarding it for some other method? Why in every general discussion should there be a contradictory note, even among the surgeons, which note is emphasized by the internists and gastro-enterologists?

Is it because many ill-considered opinions find their way into the journals? Is it because the subject possesses such inherent difficulties that the truth is yet to be discovered, and in the meantime every one is interpreting findings to bolster a preconceived conviction? Is it because a condition of good health, of "cure" is such a vague uncertain thing that to one observer a patient is seriously suffering, while to another his "discomforts are so minor as to be negligible?" Or is it that there really is such a difference in the results obtained by different surgeons? If so, do all the successful surgeons follow the same technique? Certainly they do not all follow the same technique. Some infold the ulcers, some excise with knife or cautery, some insist on the stoma near the pylorus, some insist it shall not encroach on the antrum. Some make it follow the vertical line, some make it oblique from left to right and some from right to left. Some exercise great care in sewing the two mucosae together with a separate suture. Some suture with a through and through stitch. Some use clamps. Some condemn them. Many surgeons of experience carefully select from these divergencies the steps that their judgment dictates and put them into execution with skill. Yet they find no enthusiasm for the operation

and are inclined to be apologetic that they can suggest no more certain method of curing their patient.

I have tried to be judicial in this investigation, and my sincere opinion is that these questions must remain unanswered, but if we hope to really cure chronic duodenal ulcer, we must find some means more efficient than gastro-enterostomy alone has proved to be, done by whatever technique.

It is not to be inferred that the sufferer from this lesion can gain no relief from his suffering by the operation of gastro-enterostomy, or that a large per cent. of such sufferers, (possibly over a majority) may not be restored to good health; but there is a large number in which this is not accomplished. They remain more or less sufferers in spite of our best efforts. Our dilemma lies in the fact that we are ignorant of the reasons for our successes or our failures. If we fail to cure a hernia, we know wherein we failed, if cancer recur, we know we failed to remove it in toto, if a fracture end in a poor result we know we failed to correct the malposition of bone and soft parts, if a permanent biliary fistula follow cholecystectomy, we know we have left an obstructive element in the common duct. In some duodenal ulcers we know we have failed because the ulcer did not heal, or because a marginal ulcer developed, or because a kink in the efferent loop formed. But we do not know why these things happened, and in many failures no such demonstrable cause of failure is present. Even when these are present we can often only surmise their presence, and are at a loss to know a method of relief. There are no reliable data as to the occurrence of an unhealed ulcer, but many individual reports show that such have been found at a second operation. More complete data are available as to the frequency of marginal ulcer. Bevan,³¹ Mayo,³² Moynihan,²⁵ and many others place this complication as occurring in 2-3 per cent. of the cases. Sherren¹² found it present in 19 of 318 cases in which gastro-enterostomy was done for duodenal ulcer. "No jejunal ulcer had arisen in any uncomplicated case that he had operated upon since February, 1914, and no anastomotic ulcer since he gave up the use of an unabsorbable suture for the outer layer." Erdmann³⁴ cites several cases in which only absorbable sutures were used.

Finsterer¹⁰ and Haberer¹¹ find this complica-

tion in a much higher per cent. of cases where unilateral exclusion of the pylorus was done. Finsterer states that gastro-jejunal ulcer occurred in 17—20 per cent. of such cases. Though much has been written on the subject I can find no conclusive etiological factor other than the use of non-absorbable material and the elimination of this has certainly had a beneficial influence in the prevention of this sequela.

The outcome of 91 cases of demonstrated duodenal ulcer operated upon in the clinic of the Cornell Division at Bellevue Hospital since 1916 is shown in the tables.

TABLE 1

POSTERIOR GASTRO-ENTEROSTOMY ONLY	
No. 3.	Failure—under observation 8 years. Continued pain and digestive disturbance. Re-operation after 7 years. Scar duodenal ulcer and adhesions found.
No. 5.	Fair—for 6 months. Pain after 1 year.
No. 6.	Excellent—1 year.
Nos. 7 & 8.	Fair—6 months.
No. 10.	Excellent—5 years.
No. 14.	Fair—2 years.
No. 16.	Failure—Excellent 6 months. Recurrence 1 year. Re-operated 6 years. Ulcer found. Died pneumonia.
No. 17.	Excellent—6 months.
No. 19.	Failure—6 months to 7 years.
No. 21.	Fair—Excellent 6 months. Return symptoms 3 years. Controlled by diet and alkali.
No. 25.	Excellent—4 years.
No. 26.	Poor—6 months.
No. 27.	Excellent—6 months.
No. 28.	Fair—6 months.
No. 37.	Excellent—6 months. Indigestion 4 years.
Nos. 40 & 41.	Excellent—5 years and 6 months, respectively.
No. 42.	Failure—1 to 4 years.
No. 48.	Fair—1 to 3 years.
No. 50.	Failure—6 months to 5 years. Ulcer present by x-ray.
No. 56.	Failure—Well for 2 years. Ventral hernia repaired after 1 year, when no ulcer was found. Symptoms recurred 2½ years. X-ray shows pyloric obstruction.
No. 66.	Fair—3 months.
No. 69.	Excellent—6 months.
Nos. 71 & 73.	Failures—well 3 months. Then recurrence, all symptoms 15 months and 20 months, respectively.
Nos. 74 & 75.	Excellent—2 years.
Nos. 76 & 81.	Excellent—2 years and 1½ years, respectively.
No. 87.	Failure—Re-operation 10 months, ulcer present.
No. 88.	Poor—6 months.
No. 89.	Fair—Excellent 6 months. Then recurrence. Control by diet and alkali.
No. 91.	Failure—X-ray shows ulcer 8 months.
No. 92.	Excellent—10 months.
Nos. 93 & 94.	Fair—Return symptoms 4 months and 5 months, respectively. Controlled by treatment.
No. 95.	Excellent—7 months.
Nos. 96 & 100.	Fair—9 months and 2 years, respectively.
No. 112.	Excellent—2 years. Pyloric obstruction present at time of operation.
No. 113.	Fair—2 years. Diet and alkali control symptoms.
No. 115.	Failure—Post-operative death. Autopsy showed open bleeding vessel in base ulcer.
Nos. 118-121-125-130.	Fair—3 months, 2 months, 10 months, 6 months, respectively.
Nos. 134 & 143.	Excellent—5 months and 3 months, respectively.
	Excellent=Perfect health without treatment..18
	Fair=Some symptoms controlled by diet, etc..18
	Poor=Some symptoms not controlled by diet, etc. 2
	Failure=Condition unchanged by operation, even with diet, etc.....11
	49

TABLE 2

POSTERIOR GASTRO-ENTEROSTOMY PLUS PYLORIC OCCLUSION	
No. 1.	Fair—well 6 months. Return symptoms 1-2 years.
No. 2.	Excellent—6 months.
No. 4.	Excellent—1 year.
No. 9.	Failure—6 months to 6 years.
No. 11.	Fair—under observation 8 years. Symptoms present.
No. 12.	Excellent—6 months.
No. 13.	Failure—no relief 6 months.
No. 18.	Fair—fullness, discomfort 6 to 18 months.
No. 23.	Excellent—6 months.
Nos. 24 & 30.	Fair—6 months each.
Nos. 31-32-33.	Excellent—6 months, 6 months, and 4 years, respectively.

No. 45a.	Fair—excellent 6 months. Then return symptoms controlled by diet and alkali 4 years.
No. 128.	Excellent—1 year.
	Excellent=Perfect health without treatment.. 8
	Fair=Some symptoms controlled by diet, etc. 6
	Failure=Condition unchanged by operation, even with diet, etc..... 2
	16

TABLE 3

POSTERIOR GASTRO-ENTEROSTOMY PLUS REMOVAL OF ULCER, BY ACUTE PERFORATION, CAUTERY, EXCISION, INVERSION OR RESECTION WITH PYLORIC PORTION OF STOMACH

No. 15.	Excellent—Acute Perforation. Suture—6 months to 2 years.
No. 34.	Failure—Acute Perforation. Suture. Excellent 6 months. Then return of symptoms for 4 years. Re-operation. Duodenal ulcer and jejunal ulcer found. Latter excised. Well 7 months.
No. 51.	Excellent—Ulcer cauterized. 3 years.
No. 53.	Excellent—Ulcer inverted. 3 years.
No. 72.	Failure—Acute Perforation. Suture. Immediate result fair. Return symptoms uncontrolled by diet, etc.
No. 82.	Fair—Acute perforation. Suture. Excellent 6 months. Fair 15 months.
No. 85.	Fair—Polya. 6 months to 1 year.
No. 103.	Fair—Billroth II 6 months.
No. 104.	Excellent—Acute perforation. Suture. 3 years.
No. 111.	Excellent—Ulcer cauterized. 1 month.
No. 119.	Fair—Ulcer cauterized. 2 months.
No. 133.	Fair—Billroth II. 5 months.
Nos. 136-138-142-144-146.	Excellent—Polya. 4 months, 5 months, 3 months, 1 month, respectively.
	Excellent=Perfect health without treatment..10
	Fair=Some symptoms controlled by diet, etc.. 5
	Failure=Condition unchanged by operation, even with diet, etc.
	Acute perforations 2
	17

TABLE 4

DEATHS

No. 46.	Posterior Gastro-enterostomy and Pyloric Occlusion. Died 3 hours post-operative.
No. 47.	Posterior Gastro-enterostomy only. Re-operated on 13th day for drainage of abscess containing alkaline fluid. Presumably leakage from stoma.
No. 84.	Posterior Gastro-enterostomy only. Ulcer adherent to liver. Died 5 days post-operative. No autopsy.
No. 91.	Posterior Gastro-enterostomy only. Patient in extremis. Could take no nourishment. Fed through jejunostomy for 18 days before operation. Died starvation.
No. 95.	Posterior Gastro-enterostomy with Cauterization of Ulcer. Died 9th day from hemorrhage thought to come from ulcer site.
No. 108.	Polya. Died post-operative pneumonia.
No. 110.	Polya. Died post-operative hemorrhage or peritonitis. No autopsy.
No. 115.	Posterior Gastro-enterostomy only. Died post-operative hemorrhage. Showed at autopsy to have come from eroded vessel in ulcer.
No. 139.	Polya. Died post-operative pneumonia and lung abscess.

Though the technique has not been quite so uniform as that given in Dr. Peck's²⁹ series, the same general method has been followed in doing the gastro-enterostomy. Non-absorbable sutures have been the invariable rule. The stoma is made in or close to the antrum, as near as possible to the greater curvature, and usually in an oblique direction downward from left to right. Its length has been from 2" to 2½" The rent in the mesocolon is sutured to the gastric side. The jejunal stoma is longitudinal on the anti-mesenteric mid-axis. The short or no loop has been used, usually with reversal, but when non-reversal made a more easy fall this was used. The Treitz fold of peritoneum is divided when indicated. In some cases care was taken to suture the mucosae separately, but since this was in the later part of the series, we cannot say that the results have been bettered thereby. The

use of clamps has been general but not invariable, and no conclusions can be drawn concerning this feature. Pyloric exclusion—mostly the Wilms method was employed in the earlier cases. They all seemed to me to have a much harder time post-operatively than when this was not done. Every effort has been made to keep all patients under medical and dietetic care following operation and to have them report back at intervals to the followup. An almost invariable rule was that they remained in the hospital for twenty days at least, and then spent two weeks at the Burke Convalescent Home in the country.

Bellevue is a large municipal hospital and receives as its clientele the poorer and harder worked classes. Their ability to follow a careful regime is limited both by environment and by ignorance. Many of them belong to the floating population, and it is difficult to keep them under continued observation and care. With the aid of the department of gastro-enterology at the Cornell Medical College, which is directly across the street from the hospital, we have had greater success in this than would have otherwise been possible.

The series here presented only includes those cases in which a posterior gastro-enterostomy was done either alone or in conjunction with other procedures. Simple excision of the ulcer, pyloroplastys, and acute perforations with simple suture are not included. Acute perforations which had a posterior gastro-enterostomy in addition to suture of the perforation are included provided they survived the peritonitis resulting from the perforation.

Granting that we have over-emphasized in Table I of Simple Gastro-enterostomy the symptoms which class certain cases as fair or poor, as suggested by Wm. J. Mayo³⁵ in a recent editorial, there still remains an impressive array of failures. Even these failures have not condemned the patient to a life of complete invalidism. They are most of them earning their living under the handicap of the disease. But this they were doing before the gastro-enterostomy was performed, and the operation is classed as failure because it failed to alter the condition for any considerable time. The same is true of the "Fair" cases. They are improved and get on fairly well with care in their diet and work. But so they did before the operation, and it seems to us that the operation is not the most

important factor in the improvement. One is forcibly struck with the number of cases that are classed excellent after a short period following the operation, but at a later date show marked symptoms placing them in the class of failures. It is also to be noted that the failures are often due to the fact that the ulcer did not heal, or in the healing left deforming scars or crippling adhesions. At the most enthusiastic estimate only 36 satisfactory results can be accepted, that is approximately 73 per cent., against 11 failures, approximately 22 per cent., in the 49 cases which were treated by posterior gastro-enterostomy alone. It is probable that those cases classed as excellent or fair for short periods only, have remained in statu quo because every effort is made to keep all cases under observation, and if the operation failed to give relief, the patient is more apt to report back for advice.

A better showing is made in those cases in which a pyloric occlusion was added to the posterior gastro-enterostomy, in that only 2 failures in 16 cases are recorded. See Table 2.

Still better is the result where some method of removing the ulcer is employed,—only 2 failures are found in this series of 17 cases, and both these were when the ulcers were destroyed by a pathological perforation. Eliminating these two cases, and including the cases classed as fair, on a more favorable scale we find 15 cases giving a satisfactory degree of success with no failures. (See Table 3.) Turning now to the fatalities, Table 4, we find a disproportionate number debited against the more radical procedures, particularly the Polya type. It is true that this operation was done only in those cases showing the most advanced lesions—great induration, chronic perforations, and complicating adhesions. It is also true that the deaths occurred in the earlier cases, when the technique was not so perfected as in the simpler, more standardized operations. Further, these operations have been done in many cases of gastric ulcer, and recent cases of duodenal ulcer not included in this study. These factors deserve consideration in estimating the relative danger of the various operations. Our results will be seen to confirm my study of the work of many other clinics, namely that gastro-enterostomy alone as a curative factor in duodenal ulcer leaves much to be desired. Either the changes brought about

by this procedure are not those adapted to the permanent cure of the ulcer, or the technique must be farther improved to obtain this result. There does not seem to be much hope that the latter can be accomplished when one considers that the operators reporting the best results differ in many important details, and those operators who do not claim complete satisfaction from gastro-enterostomy follow in all essentials the same technique, not differing more than their more successful colleagues differ among themselves. A general tendency is seen in the later writings of the most enthusiastic supporters of gastro-enterostomy to limit this operation more than they have in the past, and to advocate in an increasing number of cases a supplementary procedure, or the more radical operation of resection. Peek is a notable exception to this, in that he emphatically protests against such tendency, and his paper before the New York Surgical Society was presented with the purpose of combating the more radical procedures. The more recent writings, however, of Moynihan,²⁵ Judd & Rankin,⁴² C. H. Mayo,⁴ and others, indicate to me that they are finding less complete satisfaction in gastro-enterostomy alone, than had formerly been the case. I trust that I am not misinterpreting them in this respect.

The most ardent advocates of something different from the gastro-enterostomy are Finney,¹⁴ Flint,¹⁵ and others, who frankly prefer some type of pyloroplasty, DeQuervain³⁶ (who finds only 65 per cent. counts after gastro-enterostomy alone) and Finsterer¹⁰ who advocate very extensive resections, even for small duodenal ulcers, and Haberer¹¹ who also advocates excision of a less extensive type. These operators obviously believe that gastro-enterostomy does not fulfill the needed conditions for curing duodenal ulcer.

It is fully appreciated that until the etiology of duodenal ulcer is more clearly understood, our treatment must to a certain degree be empirical. While all attempts up to the present time have left the etiology largely an unsolved problem, progress is being made towards a solution. The studies in the direction of proving the relation of foci of infection to the production of ulcer are continually going forward: for example those recently reported by Nakamma³⁷ working with Rosenow.³⁸ Many writers believe that their clinical results are improved if they successfully remove all possible foci of infection, either within

the abdomen, including the ulcer itself, as advocated by Moynihan,³⁹ or in extra-abdominal parts as urged by many writers. Another important element in solving the cause of ulcers lies in the production of experimental chronic ulcers in animals, as accomplished by Mann & Williamson⁴⁰, and also by Dragstedt and Vaughan.⁴¹ It is therefore a justifiable hope that this long baffling problem will ultimately be solved, and when it is solved, our treatment will become much more accurate, and prophylaxis will in all probability become a successful accomplishment.

Until this is accomplished, what course should be followed by the profession in treating duodenal ulcer? Notwithstanding the enthusiasm and satisfaction of some surgeons for the operation of a simple gastro-enterostomy, I think it is fully demonstrated that this operation is not a completely satisfactory solution of the problem. It however, has a definite value until something better is evolved, and I want to guard against the assumption that I advocate its abandonment. I shall beyond doubt do the operation myself many times in selected cases.

The purpose of this communication is to focus attention on its shortcomings and to arouse in the minds of surgeons the necessity of finding more efficient methods. In this review of the subject, I have been impressed with the belief that more and more evidence is accumulating to the effect that there is an etiological relation between foci of infection and duodenal ulcer. Hence in conservative treatment more attention must be paid to the elimination of such foci. This must be followed up at the time of, and subsequent to surgical intervention.

It seems demonstrated that ulcers which remain active after a proper course of medicinal and dietetic treatment, should be removed to most certainly insure against their being a source of trouble. The question which my study leaves unanswered in my own mind is as to the wisest means of accomplishing this removal. Four general methods are at our disposal. 1—Excision of the ulcer either by knife or cauter. 2—The same with an added gastro-enterostomy. 3—A pyloroplasty or gastro duodenostomy with coincident removal of the ulcer, and 4—A resection of the diseased portion of the duodenum, the pylorus, and the antrum of the stomach.

In favor the first is the well confirmed observation that many persons remain entirely well

after an acute duodenal perforation, which has been treated by simple suture. Most surgeons advocate nothing more than this, unless the repair has dangerously constricted the pylorus. In non-perforating ulcers, however, the consensus of opinion is that this procedure is not efficient, and the second procedure—the addition of a gastro-enterostomy—is advocated. To this the objections to a gastro-enterostomy alone apply.

One cannot escape the conclusion that removal of the ulcer and a repair by a pyloroplasty, or a gastro-duodenostomy most nearly conforms to the sound surgical principle, that all parts shall be restored as accurately as possible to the normal at the conclusion of any operation. Unfortunately there are many cases in which this operation is extremely difficult, if not impossible, by reason of the fixity of the duodenum. Technical skill is overcoming the difficulties, and the usefulness of this method is covering a larger field.

My personal conviction is that the more radical method named under the fourth heading will occupy an increasingly large place in our work until the knowledge of etiology permits us to disregard the danger of recurrence of ulcer. To the properly trained surgeon such restrictions are not matters of great technical difficulty, and the mortality rate should not be higher than in the simpler methods. The pre-operative transfusion has given us a tremendous safeguard for these patients. They stand this operation without evidence of shock and the post-operative convalescence is always noted as particularly smooth. Its great advantage lies in the fact that it removes for all time the danger point with these patients, namely, the first portion of the duodenum and the pylorus.

The most nearly physiological repair after such resection is the Billroth I type, but it is undoubtedly true that dangerous tension may result therefrom. There seems to be little choice between the Polya and the Billroth II, and in my own work I use the method that gives the more easy and natural fall into the jejunum from the stomach stoma. The proximal end of the jejunal stoma should be toward the lesser and the distal at the greater curvature. I am very strongly impressed with the finding of Roeder⁴³ and others, that separate suture of the mucosae, including the muscularis mucosae of the two viscera, should be done, and with a sufficient

redundancy so that the rugae may be in evidence. Clamps should only be used where absolutely needed to prevent contamination, and not as controllers of bleeding. This permits the separate ligation of bleeding points and allows the placing of the sutures for the sole purpose of accurate union, and does not require them to be placed for the additional purpose of hemostasis, which may, because of tautness and position, prejudice their efficiency for the former. Moreover, it removes one factor in causing trauma of the mucosa.

I desire to express my thanks to Dr. Woodhull L. Condit for aid in some of the follow-up work of this paper.

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TRAUMATISMS OF THE HEAD*

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When we examine our medical journals published during the last decade, we find quite a dearth of articles written on this subject, and I have often wondered why it is so; certainly not because we have reached the pinnacle of treatment in that branch of surgery, neither is it because it is not a subject worthy of our best thought and study; for I regard it as being a subject of great importance, not only to the surgeon, but to the general practitioner as well, as there are but few physicians who have practiced medicine for any length of time, but have been called to treat traumatisms of the head, and every physician should be able to differentiate between cases of concussion and compression, and by so doing they will be able to direct their treatment intelligently.

During the World War surgeons were given the greatest opportunity in the world's history to observe and treat injuries of the head, and while they gained much valuable information in the treatment of these forms of injuries, we are still far from the goal, when it comes to making surgery of the head an exact science.

Traumatisms of the head are probably as old as the world. For centuries before the circulation was discovered, trephining of the skull was done for injuries of the head in different countries, as has been well demonstrated by skulls unearthed that bore the ante-mortem marks of the trephine, and yet, the surgeon of today would give all he possesses, if he could always know when, and when not to trephine an injury of the head.

How strongly are we reminded of our limited

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knowledge in this branch of surgery when called to treat a severe emergency head injury.

What would it be worth to the surgeon, if he only possessed definite knowledge, and could say, this is a case of concussion, or a case of compression, or a case of concussion complicated with compression, or a case requiring operation, or one in which an operation is clearly contra-indicated.

I am not going to attempt to give you anything new, but simply to lay down for your guidance a few landmarks as I have found them in these forms of injuries.

The most frequent class of head injuries which the surgeon is called to treat, are the cases of concussion, and they are not dependent on fractures, but simply to a blow on the head, and in many of the fatal cases of uncomplicated concussion, autopsy fails to show any visible alteration in the brain. The force of the blow produced instantaneous death by paralysis of the vagus and vaso-motor centres.

What is the picture presented to the surgeon in uncomplicated cases of concussion? The patient is above all, unconscious, he sees, feels and hears nothing. His expression is that of one in a deep sleep, the extremities are cold, the skin is pale, and the face has a pinched expression. There is usually repeated vomiting, especially immediately following the injury, the pupils will usually contract when suddenly exposed to a bright light. One of the cardinal symptoms is deep respiratory efforts alternating with superficial and irregular breathing. The pulse becomes slow, often sinking as low as fifty or less to the minute.

Of late years I have come to divide cases of concussion into three classes. In the first class the patient lies benumbed and unconscious, and the heart does not become slow, therefore we know that only the cerebral cortex is affected and not the vasomotor centres, which allows the heart to go on working in a normal way.

In the second class of cases we know a greater degree of violence has been done, and that not only the cerebral cortex has been paralyzed, but that the vagus centres have been stimulated to increased activity.

In the third or severe forms of concussion, not only are the higher or psychical functions profoundly depressed, but also the automatic apparatus hidden in the medulla oblongata is at-

tacked. The patient lies in the deepest coma, and in contrast with the other forms of concussion, the pulse is rapid and irregular.

When we come to analyze symptoms of concussion, we are able to extract certain underlying principles. The symptoms are produced with extraordinary suddenness, and with fullest intensity at the outset, and secondly, they diminish in intensity progressively and are transitory, and should disappear in a few hours or days. Any condition therefore which remains stationary for a long period, or grows worse, is not pure concussion, and if after a reasonable time there is no improvement, we can no longer rest our diagnosis on uncomplicated concussion, but must assume the presence of a more severe lesion.

I have seen cases of concussion complicated with contusion or extravasation of blood, lie for weeks in an unconscious state, and as soon as absorption took place they made an uneventful recovery without operation.

If we keep clearly in our minds the mental picture of concussion, it will enable us to differentiate between cases of concussion and compression. A history of the case will enable us to make a diagnosis.

Concussion is of necessity produced by the sudden impact against the head of a body in rapid motion, or vice versa, there must be a blow.

When a slow moving wagon wheel runs over a man's head and injures it, we know that it is not concussion, or when a slow moving train catches the head between the bumpers and injures it, the same thing obtains.

We should always bear in mind, that the brain is enclosed in a complete bony casing, and is entirely incapable of being compressed into any smaller compass without injuring its structure.

Here again are we greatly aided in our diagnosis by a history of the case.

When we see a patient who has only recently recovered from an attack of concussion, and after a short time begins to complain of ringing in the ears, flashes of light, headache, vomiting, restlessness, drowsiness, delirium, congestive flushings of the face increase of blood pressure with slow pulse, we know that we have to deal with a hemorrhage somewhere in the brain or meninges, because of the free interval, and the symptoms that rapidly followed.

Ninety per cent. of hemorrhages after injuries of the head are from the middle meningeal ar-

tery or some of its branches. If the hemorrhage be small, the patient may complain only of flashes of light or headache, with no focal symptoms whatever, but if more severe, there will be unconscious, delirium, vomiting, flushing of the face, slow pulse, with rapid rise of blood pressure, and if in addition, we have stertorous respirations of the Cheyne-Stokes type, the face becomes livid, and the slow pulse rapid, we know that the end is near, and that we have only a limited time in which to relieve our patient.

I know of no test for *compression* of the brain so sure as rapid rise of the blood pressure, and if possible, the surgeon should keep convenient a sphygmomanometer in order that he may take the blood pressure, as it will often rise from normal to two or three hundreds in a very short time, and is a valuable aid to diagnosis. Too great stress cannot be had on the value of an x-ray examination in practically all cases of head injury of any gravity.

I wish to discuss briefly, just what takes place in the brain in cases of compression. The cerebral cortex is the seat of consciousness, requires the greatest amount of nutrition, and is more easily disturbed than any other portion of the brain. Consciousness is lost more easily than any other function, and vice versa, returns only after the circulation has been fully restored.

As soon as compression takes place it produces an anemia of the brain by squeezing out the blood, paralyzing the cortex, and this in turn stimulates the vasomotor apparatus, which causes the blood vessels of the rest of the body to contract, and as there is no vasomotor apparatus in the cerebrum proper, it forces the blood from the rest of the body into the brain and is nature's method of restoring the circulation.

The vasomotor centers however, can only retain their stimulation for a limited time, and then the blood pressure falls, only to go up again when the vasomotor apparatus resumes its stimulation, and thus we see the life and death struggle going on between the paralyzed cortex and the vasomotor centres, and when the compression pressure exceeds that of the vasomotor centres, death occurs from paralysis of the vagus or center of respiration and circulation.

In the treatment of cases of compression of the brain, under no circumstances should the surgeon attempt to lower the blood pressure by phlebotomy, as you only lower the vital forces of

an already badly shocked patient, but what is far preferable is repeated spinal puncture, using care not to draw off too much spinal fluid at one time, for the reasons given above. And as you know, when you are doing spinal punctures, you are only temporizing, only trying to bridge a crisis, but on the other hand you are opening another avenue for infection, and too, it is a very difficult matter to tell just how much of the spinal fluid you can draw off with safety to your patient.

If the compression is caused by a fragment of bone pressing on some portion of the brain, the pressure symptoms come on rapidly, and we do not have the free interval as in hemorrhage.

Practically all fragments of depressed bone should be relieved, even if they are not producing focal symptoms, for fear of the end results, and unless a depressed fragment of bone be removed by operative measures it becomes a permanent encroachment on the cavity of the skull.

All, even the most severe, symptoms of general compression may disappear as soon as the factors producing the compression are removed.

The surgeon who does brain work today is a long step in advance of the brain surgeon of a decade ago, for the reason that he has the x-ray to guide him in depressed fractures of the skull.

As long as the circulation continues regular and of good volume, there is no special cause for alarm, but a condition of deep coma with complete muscular paralysis and total loss of sensitiveness to external impression, with dilation of the pupils, and irregular deep respirations will terminate fatally unless some remedy be applied immediately.

I have seen patients recover with stupor, unconsciousness and slow pulse, even after they had continued for weeks.

The treatment of cerebral pressure consists always in the removal of the cause. Whenever possible, and when the necessary surgical interference does not involve more danger than the intracranial pressure itself, the endeavor should be made to remove the factor producing it whether it be depressed bone or extravasated blood.

Before opening the skull, we should if possible make a differential diagnosis (and the x-ray will aid us very materially in this) as cases of concussion or contusion do not call for surgical interference.

In cases of compression, if we have decided

that an operation is necessary, before opening the skull, we should if possible locate the seat of the lesion, as it will often times save extensive trephining, and subjecting an already badly shocked patient to additional shock and danger.

In order to locate the lesion, the surgeon should by all means have a fair knowledge of cerebral localization, and in the majority of instances he is able to say, whether or not the lesion is located in the frontal, parietal, temporal or occipital lobes.

When trephining has to be done in the temporal region, never divide the temporal muscles if possible to avoid it, but trephine between the fibres of the muscles, as they are a great safeguard in the prevention of hernia cerebri, especially if we have to open the dura.

Any interference above all must fulfill two indications, the arrest of the hemorrhage and the compression of the brain.

Since ninety per cent. of the hemorrhages of the brain are from the middle meningeal artery, the surgeon should have a knowledge of the location of this artery and its branches, as it will be an aid in locating the seat of the hemorrhage. Aphasia always points to an anterior hematoma. Marked facial paralysis points to frontal paralysis and below. Anesthesia or disturbance of sensation points to posterior lesion. An isolated paralysis of one arm always indicates that the lesion is in the middle portion of the central convolution or middle motor area. The leg center lies in the superior portion of the central convolution, and is rarely ever affected alone, as the branches of the middle meningeal are so small by the time it reaches that center.

Cases of mild paralysis coming on from 24 to 48 hours after an injury, as a rule are due to collections of serum or edema, and should not be trephined. Cases of hemorrhage producing only moderate pressure symptoms, do not as a rule require trephining, as they are usually absorbed in a short time. The cases in which pressure symptoms come on shortly after an injury, and the paralysis persists, should be trephined to prevent the ill effects on the nerve fibres of continued pressure, and to restore consciousness, and by that means prevent inhalation pneumonia, from which so many unconscious patients die.

In all cases of pressure symptoms on the me-

dulla it is imperative that trephining be done, as the bulbar centres always give out in a few days under continued pressure.

If in doubt relative to the location of the compression it is better to expose a large area of the brain, and I know of no method so good as Cushing's osteoplastic flap operation, as in that method you can expose a large area of the brain without danger of the bone dying.

To do the Cushing's osteoplastic flap operation, quickly and deftly, a small trephine, a Marion's guide and chain saw, are all that are required. Always make the arch of your flap toward the top and the base below, with the skin still attached, so it can be laid back into position when the operation is completed without danger of the bone dying. By exposing the large area, it enables the surgeon better to expose the clots and bleeding points and relieve them.

In conclusion allow me to say, that in every case of traumatism of the head we are called to treat, we should weigh well the symptoms, and use every means at our command in order to arrive at a correct diagnosis before deciding to open the skull, and should always take the conservative course, as I regard it as being the height of inconservative rashness and lack of wisdom on the part of the surgeon to open the skull of every unconscious patient with a head injury.

DISCUSSION

Dr. J. R. Harger, Chicago: I was very favorably impressed with Dr. Mitchell's discussion of the question of head injuries. He has dealt with the subject in a very rational way. When I am considering head injuries I always think of the teaching of our dear friend, Dr. Murphy. He impressed on us one thing that all injuries of the head should be considered serious and treated as a serious lesion until proved otherwise; that conservatism is all important and unless there is some definite indication from the physical findings or marked disturbance in blood pressure or circulation, that the head should not be opened, that the treatment of head injuries should be considered just as though they were injuries to some of the superficial tissues, that the patient should be put at rest until such a time as the injury has had opportunity to repair itself, whether it is slight or severe. Dr. Murphy used to say, and I think Dr. Kreuscher will bear me out, that a head injury whether there was unconsciousness or not, if the coma was of long standing or short and if there were no evidence of compression, should be treated by rest in bed for three or four weeks.

As to the method of operating and the discussion of the blood pressure I agree heartily with what Dr. Mitchell has said.

DEFECTS IN THE TONE SCALE THEIR RELATION TO POOR SPELLING AND LOSS OF MUSICAL TONE*

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CHAMPAIGN, ILL.

We find people who are poor spellers divided into three classes:

Those deaf from disease.

Those who are inattentive.

Those with absolute tone islands.

In this investigation we confined ourselves to those with islands in the tone scale. Of the 5,000 persons examined consisting of school children, Veterans Bureau patients and University students, 25 per cent. were poor in spelling and 30 per cent. were musically tone-deaf. The poor spellers were among the 30 per cent. of musically tone-deaf patients.

By musically tone-deaf patients we mean those who cannot memorize or carry a musical tune. These are classed together with the poor spellers because we believe the cause to be the same, even though the missing nerve ending may be in a different section of the receptive apparatus.

In spelling a word the patient very seldom failed on the vowels but on the consonants. The ears were tested by the audiometer, Galton whistles, Koenig cylinders, the monochord and the telephone connected with the high frequency oscillator.

The Koenig cylinders are bars in sets of twenty-two. They are calibrated in the musical scale according to French notation. From 8192 V. S. to 65,536 V. S. The tones arise from the longitudinal vibrations set up as they are struck with a metal hammer.

The monochord consists of a steel wire maintained at a constant tension between two uprights fixed on a rigid bar. Between these uprights a movable bridge passes over a fixed scale, indicating the frequency. The tones are obtained by use of a bow or by rubbing the wire with a friction sponge.

In using the audiometer all tests seem to indicate that tone gaps may occur in any portion of the range.

In estimating hearing, we must have an estimate of the range of hearing, (quality of hearing) and the quantitative degree at each pitch. Only with such a record can one have an ac-

curate knowledge of the degree of hearing a patient possesses. Hearing for one part of the scale may be seriously impaired while that of another part is hardly affected. Accurate results can be obtained by estimating quantitatively the hearing for simple tone at all pitches. When one remembers that the qualitative range may be estimated at from 20 D. V. to 20,000 D. V. or higher, one recognizes the wide area to be covered.

Before going into the pathology of these cases I will give a brief resume of the mechanism present in the sound-receiving apparatus of the ear.

All agree that the ear is a mechanism constructed for at least two purposes: 1. to conduct sound vibration, 2. to perceive simple, harmonic waves, (simple tones) and to resolve into their component parts, (simple harmonic waves) aerial vibrations compounded of different frequencies, (pitches) which reach the ear together and in this analysis to stimulate nerves spread out in a particular linear formation.

The middle ear which serves to conduct the sound waves, is designed to solve the mechanical problem how best to transform a motion of great amplitude and little force such as impinges on the drum, into a motion of small amplitude and great force, such as has to be communicated by the stapes to the fluid in the labyrinth. The second problem is the means by which the nerve endings are stimulated and the transformation of simple or compound sound vibrations into nerve vibrations are brought about.

If we follow a sound wave from the time it strikes the concha we shall see that it is carried along the column of air in the external auditory canal and impinges upon the tympanic membrane. This starts a molecular movement in the ossicles, which in their turn transmit this impulse to the endolymph, compressing and then rarifying it, sensations which are perceptible at various parts of Corti's organ and interpreted in the remainder of the perceptive apparatus. The impulse thus carried to its proper receptive and analytical center in the brain is there recognized as a given sound.

The organ that does the separating of the tones before they are carried to the brain, is the membrana tectoria of the cochlea. Here we find some two thousand hair-like nerves, each one of which has the power to gather sound going

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at different rates of vibration or pitch. The low tones go to the apex, while as the tones become higher they are taken up by the nerve hairs toward the base of the cochlea.

Pathology. Deficiency of hearing may be at both ends of the tone-scale or in the middle of it, but the most common cases are those that have islands or missing links in the scale.

Let us suppose that each letter of the alphabet has a separate little hair-like nerve to receive its sound with the vowels, such as A. E. I. O. U, having stronger hairs. The patient is given a word to spell. If all the nerves are working in good order the sounds are harmonious to the patient, the word spells itself by the sound, but suppose the little nerves that should receive certain consonants, such as n, or p, are not working or are absent, the word does not then have a harmonious sound to the patient. He stumbles over these consonants and fails to spell the word.

The same holds true of musical tones. If the tone scale is faulty the patient has a slurred image imparted to the brain which prevents him from forming the music picture of sound as it should be. The tune is lost.

Treatment. If it should be that the nerve hairs are not missing—but lie dormant, they may be aroused by constant practice of the missing letters or notes.

When there are real tone islands, that are gaps in the tone-scale of the cochlea, the problem is difficult. The patient must learn to use his eyes instead of his ears. By constant practice a word picture can be imparted to the brain through the eyes. Even then, the patient never knows whether his pronunciation of a word, learned through the eye, is correct or not.

DISCUSSION

Dr. Elmer L. Kenyon, Chicago: I am very sorry that I do not know much about the subject. I happen to be one of those people who have a defective ear for musical pitch, and can see the relationship very clearly of the deficiency in the capability of appreciating musical pitch to a defect in the cochlea.

I am not so clear about the spelling, however. I have always felt that spelling was a matter for the sight rather than for the hearing. I meet with all kinds of children who are unable to say elemental sounds. I meet with them all the time. I have never yet met with a child, with a normal mind, who was not capable, under instruction, of learning to talk correctly, if he had a normal speech apparatus. We all know, however, that one with a deficient capability of appreciating musical pitch cannot recover. That

has been worked out by Dr. Seashore in Iowa City.

But as to spelling, I am not able to appreciate the relationship of the internal ear, the cochlea, to the spelling function. For instance, Dr. Alloway speaks of a child not being able to say "e," "o," "u," or "i," because of some defect in the tone scale. But see how complicated that would be. The sound of "i" is made up of two sounds, "ah" and "I," and there would be much difference in pitch in all probability between "ah" and "i," and, besides, there would be many over-tones in the simple production of one sound. It would require a very complicated situation in the cochlea, to get a deficiency applying to any particular compound vowel.

Now, as to spelling, we do not begin to spell until we have begun to write. What relationship can a defective cochlea have to such a word as "though?" The sounds in this word are "th" and "o," and the spelling is "t-h-o-u-g-h." The spelling has but little relationship to the sounds in many words of the English language. Spelling is little more than a matter of learning through the sight of how and what letters we put into a particular word. In a language where the pronunciation is phonetic, where we spell as we pronounce, there would be more consistency in the idea that deficiency in spelling might be due in some degree to the cochlea.

I personally have been very cognizant of my own deficiency with respect to musical pitch, but I have not been known as having any particular deficiency in spelling.

Dr. Louis Ostrom, Rock Island: Dr. Hayden is here, and I want to speak of two boys of mine. He can vouchsafe what I say.

One of my boys, and I have a lot of them, is a musical genius. He has absolute pitch. The two of them are in the Culver Military Academy. This one has absolute pitch, a phenomenal memory, and when he was ten or twelve was rated by Sousa and men of that type as the most phenomenal that they had ever met. From the time he was just four or five he has put in from three and four to ten hours a day at his music. It was just natural. It was just the same with him as eating, sleeping and everything else. It never was an effort on his part or anything else. By the time he was twelve or thirteen, he was as far along as it was almost humanly possible to be.

During this time, of course, the other boys were reading, spelling, etc., while this boy was in his music all the time. He could neither spell, read nor write.

I mention this because most artists or musicians, if you go back to their progenitors, you will find their fathers were preachers or doctors. You see many doctors whose children are unusually musical. Now this boy had unusual talent of that kind. By the time this boy was fourteen he had entered Culver Military Academy. He had his credits for the second year horizontal. When he started in his geometry, he wanted to know what all these lines in geometry meant. In other words, he didn't comprehend anything. He had his algebra and he had no idea what that was for. They started him way back around

the 6th or 7th grade. Now he is getting all the rest of the studies.

Now, I had another boy at Culver who was absolutely devoid of any musical pitch. He couldn't tell the pitch of any tone nor did he have any sense of rhythm. We started in with him the same way.

Now the clarinet is perhaps the best instrument for anything of that kind. The clarinet has the most perfect tone. In transmitting over the radio, for instance, it will transmit better than any other instrument because of its wonderful over-tones. It is next to the human voice when it comes to perfect tones and the over-tones that make musical tones. I started him on the clarinet. Because he was absolutely devoid of pitch, I had a piano that was tuned absolutely perfect at frequent intervals, and I would spend hours of the day to make him blow in tune, and I kept on and kept on, and in about four years of that work he got so that he could tell one tone from another, and I tried to have him see the quality of the tones. Whether he made this kind of squawk or that kind, it sounded all the same to him, and after four years I gradually developed it. On the other hand, he was consistent in books, and he could spell and read everything. But he had no musical talent.

At the end of six years he entered Culver. It took five years to get any sense of rhythm into him. Now after nine years he is master of the clarinet.

When it comes to matters of that kind in spelling it is far-fetched with this other boy. He paid no attention to words or the sound of anything. It was all a blank in there, because he didn't train that center up in the head rather than in the ear.

There are two types of two brothers, only a year and a half apart, entirely different.

Dr. Alloway (closing): Dr. Kenyon admits from the start that he knows nothing whatever about the subject, and I think I can eliminate all of his ideas. But he says that he thinks that spelling is due to the eye.

I visited in Iowa the School for the Blind, where there are some brilliant spellers. I know full well that they never received any of these letters or the sounds of letters through the eye, which knocks that out.

Now, then, take a word like "though," the very word I had on my paper here, and I expected somebody to bring that up on account of a difference in the slurring over of those tones.

It is the business of the ear to separate these tones out and to find where they belong. There's two thousand little hairs hanging down in there to take up these tones and figure them out and to send them to the proper center. If the nerves are dormant and don't take up these sounds, the patient is dumb and does not receive these things in the center, although the center in the brain may be perfect. When sounds are transmitted properly they take no effect.

We have a range of eight octaves in the human voice, and that is all that it is necessary to take up. There is a different place where the musical tones are received than where spelling is received. It is thought

by Bunch, and I think it is C. W. Hewlett, of Iowa, that these musical tones are further towards the apex and that the spelling tones for consonants are further down towards the middle.

Dr. H. B. Young, of Burlington: He may not distinguish between ordinary words and phonetic words.

Dr. Alloway: That is where education comes in. Spelling in our language is absolutely wrong in lots of cases. That is, the way it is received in the ear "tho" and the end "ough" that is added should not be there.

Dr. C. M. Robertson, Chicago: How do you account for the fact that most all of the graduates of Harvard and Yale are unable to spell anything?

Dr. Alloway: Are you from there, doctor? We find around Boston that the tones are so peculiar and heightened that the ear is unable to grasp such high class stuff.

CHOLESTEATOMA INVOLVING THE ETHMOIDAL CELLS AND THE ANTRUM OF HIGHMORE*

G. C. OTRICH, M. D., F. A. C. S.

BELLEVIEW, ILL.

The diagnosis of the condition which I am about to report will undoubtedly be questioned. I questioned it myself for some time—called it cholesteatoma or caseous metamorphosis. By some authors these are divided into the true cholesteatoma and the secondary from the diseased mucous membrane of nose or accessory sinuses. There being such a wide difference of opinion, I will not burden you with details of difference, but will give you the gross facts as I found them.

Mr. P. R., aged 60 years, farmer:

Referred for relief of nasal obstruction, right nostril.

Previous history: Slight attack of flu ten years ago. Called on family physician for relief of nasal obstruction eighteen months ago; was given antiseptic douche and oil. About one year ago noticed slight yellow discharge which was very fetid. Claims never to have had headache in his life, and been in perfect health otherwise.

Examination findings:

Two sebaceous cysts on scalp, posterior parietal region, slight bulging of ascending process of sup-maxillary and lacrimal bone.

Intra-nasal findings:

Left side normal; right side a slight yellowish mucopurulent discharge, very fetid. Inferior turbinate showing no noticeable changes. The middle turbinate had the typical appearance of polypoid hypertrophic condition, boggy to touch but no perceptible shrinking with the application of adrenalin or cocaine. Post-nasal examination: the nasal space was completely obstructed.

My pre-operative diagnosis was chronic hypertrophy

*Read before the Section on Eye, Ear, Nose and Throat, Illinois State Medical Society, Quincy, May 20, 1925.

of middle turbinate, secondary to chronic ethmoid disease. I prepared to amputate the anterior end of the middle turbinate for further investigation, when I snipped it I met no bony resistance, a cheesy material began to ooze out, and the further I proceeded, the more caseous material I encountered. When the turbinate was completely removed, it was found that the bony structure was completely destroyed.

Exploration of the ethmoids with a sound, was like passing it through cheese, no bony resistance till the ethmoid orbital plate. I used a dull large sized curette and began scooping out this material, then sounding for the superior antral wall. I found there was none. I then introduced a trocar via the meatus with scarcely any perceptible bony resistance; irrigation was then done, with very little pressure because of the bony destruction that I know now had taken place. This brought forth large amounts of the cheesy material. After thorough irrigation, inspection of the field of operation showed one of the most complete jobs of destruction you can imagine, there being nothing left but the lateral walls of the antrum and the ethmoids. The frontal and sphenoid had not been involved, and showed no signs of an inflammatory process. Not considering the importance of the case I did not instruct the nurse to save a specimen of the material removed, till after the operation was finished, but she had destroyed everything, therefore I am without a pathological report. It is impossible to say to what type this case belongs. Whether there is any relation between the large sebaceous cysts on his head, and this condition I do not know, but his mother and brother also had large cysts on their heads. Some authorities would associate these histories and call this a true cholesteatoma.

DISCUSSION

Dr. Louis Ostrom, Rock Island: It is rather unsatisfactory to discuss this subject because so little has been written on the subject from our standpoint. A lot has been written from an oral standpoint, particularly in Germany. I made some effort to look up some of this matter rather for my own information than to give it to you.

As the doctor stated, there are two classes of true cholesteatoma. Recently in our A. M. A. journal a cholesteatoma of the cecum was reported, perhaps the only one reported, of true tumor.

These tumors are found commonly in the brain, in the meninges, the spinal cord, the cranial bones. Some have been reported in the frontal sinus, which raises the question whether it is a true cholesteatoma. The doctor closed in saying it was a true tumor.

A true tumor of the cholesteatoma type must be encased in this epithelial lining and then a macerated mass of broken-down epithelial tissue inside containing cholesterol crystals. That makes a true tumor.

Now, on the other hand, we have a chronic necrotic inflammation which may cause a transformation of the normal epithelial covering producing the characteristics of a cholesteatoma tumor, just as are found in the ear, the urinary passages, the gall bladder, mammary glands and uterus and, as reported by the doctor, in the

antrum which, however, undoubtedly has another origin.

Destructive subacute apical or alveolar abscesses with sinus formation are called in Germany granuloma with lumen, and they have made very extensive studies on such structures where granular tissue forms around these necrotic areas, and this may persist and discharge into the antrum or into the mouth.

The granular tissue first shows a large infiltration of polymorphonuclear leucocytes and later areas of necrosis in the center by pressure. Later the pus may be absorbed, the leucocyte infiltration stopped and the lumen remain containing this necrotic tissue.

In these old conditions retrograde conditions may continue with formation of cholesterol crystals making the cholesteatoma.

Without the cholesterol crystals present, I don't think any of this cheesy material or any such mass can be classed as cholesteatoma.

I found no reference in oral surgery literature to the sphenoid sinus nor to the frontal sinus. In other words, it does not pass up nor does it go back. It can not jump over the pharynx and get into the sphenoid, and it does not jump up into the frontal sinus, but by extension directly from the alveolar process and apparently invades the antrum and the ethmoid cells.

So undoubtedly what he had was this inflammatory cholesteatoma and what we call a true cholesteatoma, which is epidermoid, is a new growth entirely from some displaced embryonic epithelial rests.

Dr. A. B. Middleton, Pontiac: I would like to ask a couple of questions. Did the patient show any symptoms of spinal or brain tumor? Is the patient still living?

Dr. Austin A. Hayden, Chicago: A number of years ago I saw what I believed was a true cholesteatoma of the frontal sinus, but the history of it was quite different from the history of the case that the doctor recites. This was on the service of Dr. Beman Douglas when I was an interne in New York city at the Post-Graduate Hospital, and it occurred after a Killian operation. The operation had been done several years, I think two or three years, before the man came with this protrusion over the eye, and the cholesterol crystals were found and the real cheesy matter with the characteristic odor.

Speaking about granuloma with lumen, just recently a very unusual antrum came to my attention, the case of a nurse in Chicago that had about two months ago an upper molar tooth removed, and the socket did not heal, and some foul-smelling pus during the last few days had begun to exude from that tooth socket. Strangely enough, the x-ray picture showed only a very slight difference in the density of bone between the involved and the uninvolved side. There was absolutely no pus in the nose on the involved side. There was, however, this pus coming out of this tooth socket, which the dentist had been treating.

Now, we opened that antrum and did a modified Caldwell-Luck operation, and the antrum was half filled with a pus that was partially cheesy in consistency and the rest of it was very thick, but the nose itself

was absolutely free from pus, signifying that the normal opening of the antrum was entirely closed. I did not regard that as a cholesteatoma.

I think a true cholesteatoma is the one in which the epithelial tissue becomes macerated and decomposed in the cavity which is contiguous but clean, and consequently cannot grow in the antrum or in the ethmoid.

The fact that this woman's nose was absolutely free from pus was very interesting.

Dr. Chas. M. Robertson, Chicago: The only condition in which you could have a cholesteatoma in the antrum without an invasion of the epithelium from the external world would be a case of embryonic epithelium. As that is always the character of a true cholesteatoma.

It is rather a false cholesteatoma where this cheesy matter forms. Cholesteatoma grows like an onion from the formation of epithelial layers. It extends and extends with this cheesy material in between the layers and cholesterol crystals.

Dr. Hayden: I think the term "granuloma with lumen" expresses that very exactly.

Dr. Otrich (closing): As I said in the beginning, the reason for presenting of this paper was the rarity of the conditions found and I am sorry that I did not get a pathological specimen.

Calling your attention again to the original paper I mentioned these cysts on the patient's head, also the cysts his mother had and also the cysts that his uncle or her brother had on the scalp. Whether that had any relation, I cannot say. The patient is living and is in perfect health.

I had talked this over with a couple of the doctors from St. Louis, and I irrigated the antrum again and centrifuged the washing and had the pathologist go over it. But Nature had made too complete an operation. It was one of the cleanest fields you ever saw. There wasn't a cell left. It was just a complete, rounded-out cavity with only lateral walls. I passed a pharyngoscope into the cavity to verify my findings. It was one of the completest operations I ever saw. I don't mean from my standpoint. I mean that Nature had destroyed everything so completely that it was absolutely a complete job.

I appreciate the efforts of the gentlemen in giving us some information on this subject. That is what I brought it up for, not from what I was to give you, but from what I could gain from the rest of you.

AMBULANT TREATMENT FOR HERNIAE*

G. A. McDONALD, M. D.
FAIRFIELD, ILLINOIS

In considering the injection treatment of herniae I refer to the use of medicines and not to paraffine.

The treatment of herniae by ambulant methods includes the injection into the hernial opening of such drugs as will set up a hyperemic condi-

tion with plastic exudate and adhesions to close the opening or canal. The proper fitting of a good and sufficient truss is an important part of the treatment. This treatment has been used in this country for about seventy-five years. I have never heard of its being used in any foreign country. Here it has not made much progress as far as the medical profession is concerned. This has not been from any fault of the treatment as a curative measure but rather by the position assumed by those who have used it, on the one hand, and those who are opposed or indifferent on the other. Those who have made a success of the treatment have gained their knowledge and experience under difficulties through their own efforts and when they have achieved some success they have not been in a state of mind to undertake to spread this information among those who have either persistently knocked the business or been indifferent. So in this state of antagonism and indifference and a lack of cooperation this treatment has not received the consideration to which it is entitled. This, I think, has been unfortunate both for the physician and his patients.

The number of ruptured people in this country runs into the millions, and it is a lamentable fact that no other affliction of equal importance has received so little attention. A poor truss poorly fitted and an operation constitute the service rendered and the advice given when one of these patients applies for medical help. Only a fraction of one per cent of the ruptured people are ever operated upon and many of these only in the most extreme cases of great necessity. Most ruptured people would not undergo a cutting operation if it were offered gratis. Many would be treated by the ambulant treatment if their physicians would so advise. In this progressive age we ought not to overlook any of the modalities by which disease or affliction can be prevented, mitigated or cured. We owe that to ourselves and to our patients. The injection treatment of herniae is a virgin field for the specialist. In every city of 10,000 or more people there is room for one. The business is clean, ethical, successful, remunerative and there is no competition as in nearly every other specialty.

The *Medical Council*, of Philadelphia, some twenty-five years ago, in publishing an article upon this subject by Dr. Souder of that city,

*Read before the Section of Medicine, Illinois State Medical Society, Quincy, May 20, 1925.

took occasion to state that the editor had personally investigated cases treated by Dr. Souder extending over a period of twenty years and that he considered the treatment superior to the cutting operation. My experience during the last twenty-five years confirms that belief.

This treatment in competent hands will cure ninety per cent of the cases as they present themselves for treatment. Most of the other ten per cent can be greatly benefited. This statement applies to all herniae mentioned in this paper except those following a cutting operation and incarcerated herniae.

This treatment is not dangerous, is applicable to all ages, causes little or no pain and can be given without the patient losing any time from his regular business or employment. Most cases will get well in two or three months' time. Eight treatments given at intervals of one week will cure the ordinary case. Some bad cases and some who do not get along well will require much more. Occasionally a case will get well in an adult with three or four treatments. In young children five treatments given one month apart will cure. All cases in children can be cured. In fact, a well-fitted truss constantly worn will cure most of them without further treatment of any kind. Also many cases in adults can be cured by the truss alone. I mean by this a well fitted truss, one specially adapted to the case under consideration and not just any truss the patient may select himself from a mail order house. There will be some relapses under this treatment, but the treatment has not hurt their case and they can be treated just as well again as at first. Under the cutting operation there are many relapses and all are worse off than before and a less prospect of being cured by a second operation than by the first one.

Etiology: Rupture occurs from infancy to old age. Is no respecter of person, trade, profession or calling. No class is exempt. It occurs most frequently during the physically active period of life, from twenty to fifty years of age. Predisposing causes are a natural weakness at the internal ring and the posterior wall of the inguinal canal and at the femoral canal and the umbilicus. A hereditary tendency seems to be exemplified in some cases. I base this statement upon the observation of many cases in boys whose fathers were ruptured. In several cases that have come under my observation the father

and two, three or four sons were all ruptured. The fact that man is an upright animal is also a predisposing cause. The exciting causes are relaxation of muscles from lack of exercise, mostly in the aged, physical strains upon the abdominal contents such as coughing, sneezing, straining at stool, lifting heavy objects, jumping, falls, and in women pregnancy, etc. These are the principal causes.

Varieties: This treatment is applicable to and I will discuss the following varieties in the order of their frequency, viz.: Indirect inguinal, direct inguinal, those following abdominal operations, umbilical and femoral. Reducible herniae only are amenable to this treatment.

Diagnosis: Indirect inguinal hernia leaves the abdominal cavity through the internal ring and follows the course of the inguinal canal into the scrotum.

Direct inguinal hernia breaks through the posterior wall of the inguinal canal and does not descend into the scrotum, but appears as a globular mass above the pubic bone. For the purpose of this treatment it is not necessary to distinguish between these two varieties. The same method of treatment applies to both. Reduce the hernia, hold it back with the hand, and with the patient standing remove the fingers from below upward; the point at which the hernia appears is the internal opening. If this is at the internal ring the hernia is indirect, if below the ring, direct. In old and large hernia the posterior wall may be dragged down until the internal ring is opposite the external. This is only important in operating for strangulation. Invaginate the scrotum upon the forefinger of the right hand, push the finger up through the external ring. As it enters the canal it will dip down behind the bone if the hernia is direct. In some fat people the external ring cannot be reached in this manner. In thin persons the internal ring can be located with the point of the finger pressed under the border of the external oblique.

A femoral hernia descends through the crural canal and lies in proximity to the external border of the femoral artery. Hernia following a cutting operation and umbilical hernia cannot easily be mistaken for anything else.

Differential Diagnosis: Inguinal and femoral herniae are the only ones likely to be mistaken for any other pathological condition. Un-

descended testicle, hydrocele of the cord or tunic, enlarged inguinal gland, and varicocele are the conditions most often mistaken for herniae. Examine the scrotum. If one or both testicles are absent they may be lodged in the inguinal canal. An undescended testicle, hydrocele of the cord and enlarged inguinal gland cannot be reduced, give no impulse on coughing and previous history is important. The aspirating needle will make a positive diagnosis of hydrocele and enlarged inguinal gland containing pus. In case of infected gland the source of the infection may be found. Hydrocele of the tunic may be differentiated from hernia by reflected light. The hydrocele is translucent and the hernia opaque. Hydrocele has a history of slow growth. Varicocele occurs most frequently on the left side, feels like a bundle of cords with the patient standing and becomes collapsed with the patient lying down. On rising it fills up from the bottom.

Inguinal hernia occurs much more frequently in males than in females. Is three times more frequent on the right side than on the left. The indirect inguinal herniae outnumber all other kinds combined. Umbilical herniae occurs most frequently in infancy and next in women during pregnancy; seldom occurs in the adult male except in corpulency. Femoral herniae are much more frequent in women than in men.

Trusses and how to fit them: Trusses are of many kinds, good, bad and indifferent. Few are made along anatomical lines but the great majority being made to sell are constructed in such manner as will best appeal to the truss buying public. A good truss should completely hold the hernia to which it is applied regardless of the occupation of the patient or the position which the body may assume. It should be easily worn without discomfort or undue pressure upon the surrounding parts. Should be made of such material as will conform to the shape of the body. Should fasten in front and have an easy and uniform pressure around the hips. The counter pressure should come upon the gluteal region from behind.

Trusses are made of malleable wire and spring steel covered with leather and from web elastic. The best truss is made from malleable wire and the poorest from web elastic. The pressure upon the rupture from an elastic truss comes entirely from the thickness of the pad. The counter

pressure encircles the entire body. The constant pressure of this elastic band around the body interferes with the circulation in the skin and subcutaneous tissues. It is not infrequent to find these tissues together with the muscles beneath greatly atrophied. The elastic has too much tension when new and not enough when old. They are insanitary and cannot be easily cleaned. They are frequently sold at an exorbitant price, on the pretense of being possessed with some miraculous power to cure. To read the ads of some of the mail order truss houses one might be lead to believe that their particular truss was endowed with brains and belonged to the Mrs. Eddy school of healing. There is no one other thing by which the ruptured people are so mulcted as by the purchase of cheap elastic trusses at a big price. There are millions of these trusses sold every year to a credulous and helpless people. The doctor ought to be in a position to give this class of patients sound advice in the matter but he usually is not, I am sorry to say.

The spring steel truss is better than the elastic and when it fits well many of them are all right. The great trouble with them is that they cannot be shaped to the body. The body must fit them. They admit of very little adjustment.

The best truss made is of malleable wire. It can be bent and easily shaped to conform to the various physiques. The pressure over the hernia can be regulated by adjusting the tension of the wire and the counter pressure can all be applied in the proper place behind.

The pad is a very important part of the truss. Here the ingenuity of the truss maker has been exhausted in his effort to make something different. The shape of the pad should depend upon the particular rupture to which it is applied. Take for instance an inguinal hernia. If the hernia is direct and the posterior wall of the inguinal canal is intact the pad should be a half globe fitted over the internal ring. If the patient is of medium size and build the pad need not be large. If the patient is fat with a heavy belly he will need an extra deep pad, and if the patient is poor and scrawny a flat pad covering more surface will be needed. The common femoral hernia needs a small pad about half as thick as long or wide. An inguinal pad should never press against or upon the public bone. Many of the mail order trusses have this defect. The

laity all think every inguinal hernia comes out close over the bone and these long pads coming down over the bone and pressing upon the spermatic cord and vessels are made to fill this demand among the millions who buy and fit their own trusses. Much more could be said upon this subject but I leave it here.

The Injection treatment. After a properly fitted truss has been applied it should be worn day and night until the hernial opening is closed so the hernia will not come out when the truss is removed. It then should be continued for from six months to a year. After the hernial opening is once closed the rupture will not come down again if proper protection is given until the muscles and tissues around the hernial opening recover their natural resistance. In some cases the truss should be worn indefinitely.

The medicines used vary with the operator. The particular prescription is not so important as the skill of the doctor in using it and in the general management of the case. The drugs are all of an escharotic or astringent nature. Principle among which are zinc sulphate, zinc sulphocarbolate, quebracho, iodine, Lloyd's tincture of thuja and calendula, sulpho-tannate of copper, creosote, potassium permanganate, guaiacol, hamamelis, etc. The medicine is injected into the hernial opening with a hypodermic or aspirating needle. The length of the needle will depend upon the thickness of the coverings of the hernia and will vary from the common hypodermic to one three inches long.

It is not possible in a paper of this kind to go into minute detail covering the whole range of the subject. I have endeavored to discuss the matter in a way to give a general idea from which anyone interested can make a start and pursue the study to his own pleasure.

In the March and April numbers of the 1905 *Medical Council* of Philadelphia, can be found a more exhaustive discussion of this subject, being a paper which I read before the Wayne County Medical Society in January of the same year. In that paper are published the various prescriptions used by most of the specialists at that time. There has been nothing new in particular during the last twenty years. I think the limit of efficiency of the treatment has been reached. If any legitimate objection can be raised against it or any defect exposed I am free to acknowledge that I do not know what they are. I am not

looking for any other improvements. When an old hernia of twenty-five years or more standing can be cured in two months without the patient being incapacitated from attending to his regular employment or suffering any inconvenience or assuming any risk I cannot see what more could be expected or desired.

In treating herniae by this method we are simply duplicating what has always been going on in the human male. When the testicle descends into the scrotum in the embryo it carries before it an invaginated fold of peritoneum as its inner covering. When the testicle reaches the scrotum nature closes by firm adhesions the peritoneal opening behind it. Nature is thus daily in multiplied thousands of cases performing an operation which man can easily duplicate but he has mostly refused to take the cue. Not only does this closure of a peritoneal sack occur in the embryo but spontaneous cures frequently occur in old cases of hernia by the same process.

CASE REPORTS

S. G. H., laborer, aged 32 years. Treated in 1902. Right inguinal hernia since twelve years of age. Hernia had never been retained with a truss. About the size of a man's fist. Treated once a week for eight weeks. Rupture never came down after fitting a truss. This man worked while being treated at clearing land and digging a ditch. Recently reported that he never had any trouble since treatment.

P. W. P., section hand, aged 23 years. Treated in 1909. Right indirect inguinal hernia from birth. Worked on section while being treated. Cured in eight treatments. After taking six treatments he took off his truss and went before a railroad surgeon for examination as brakeman. Passed the examination and was soon running a train. This case reported several years later as all right.

Mrs. C. A., aged 38 years. Ruptured on left side twelve years. Cured with eight treatments. Treated in 1910. No trouble up to present time.

Miss P., aged 15 years. Treated fifteen years ago. Got well with six treatments. Recent report that she is married and has a family. No trouble from rupture since treatment.

R. W., aged 18 months. Ruptured about six months. Cured with five treatments given one month apart.

J. Q., age 86 years. Civil war veteran. Ruptured shortly after coming out of the army sixty years ago. Cured in two months' time with frequent treatments, one every two or three days.

C. G. S., farmer, aged 35 years. Double inguinal rupture, fifteen years on one side and more recently on other. Right rupture about the size of a large grapefruit. Given numerous treatments extending over four months time. Cured.

G. F. R., farmer. Right femoral. Five years' standing. Cured with four treatments given at weekly intervals.

L. M. C., aged 4 years. Ruptured from infancy. Cured with five treatments fifteen years ago.

W. H. C., aged 40 years. Right inguinal hernia from birth. Cured with six treatments in 1906. At last report ten years later still well.

Mrs. R. H. P., aged 23 years. Left inguinal hernia for two years. Given six treatments in 1911. No trouble since.

W. R. L., aged 30 years. Double rupture from birth. Butcher. Given eight treatments. Cured, 1909.

W. J. S. Left inguinal, indirect. Scrotum ten inches long and 18 in circumference. Cured with eight treatments. Hernia never came down after being fitted with truss. This gentleman was a Presbyterian minister and reported after several years from Arizona that he had no trouble after treatment.

I believe this number of cases will give you a fair idea of what may be expected from this treatment.

ANNUAL ADDRESS*

A. P. ROBERTSON, M. D.

President of Madison County Medical Society

ALTON, ILL.

The inspirations of a moment such as this are manifold. All great art represents something that it sees or believes in. How true is this of medicine! It sees what is actually accomplished—and more—what is intended; it believes in what is to be done. It is difficult to conceive of medicine without the vision and without the faith, whereby the people may not perish and confidence may not be removed from the earth.

Above all men, the physician needs the philosophical spirit, the worship of wisdom, the love of learning. Upon these attributes is founded the cool, rational and temperate judgment, combined with the desire to search into the reason and nature of things, which are so essential in the physician's make-up.

The art of medicine is as old as the need of mankind for relief from injury and disease. The science of medicine has been a gradual growth founded upon organized knowledge gained by experience in its practice. Not all the best work in medicine is accomplished by the busiest or the most widely-known practitioners. In the words of Havelock Ellis, "Where there is most labor there is not always most life, and by doing less, provided only he has known how to do it well,

the artists may achieve more." To apply this statement would be to say that the physician who counts is not always the one who is doing the most work, but the one who is doing the most of the best work.

Medicine is a profession that can use all the resources of a man as no other profession can. It trains all the powers and all the senses. A physician's eye cannot be too keen, nor his analytical powers too well trained. If human happiness consists, to a considerable extent, in our ability to use, not only one or two of our powers but all of them, then surely one of the greatest rewards of medicine is that not only our brains, but our senses, our muscles, and our co-ordinations, can be put at the service of our patients and made of value in our professional work.

If anything will arouse interest in the pursuit of truth, it is the practice of medicine. The physician is actually forced to take an interest in what he learns from day to day from the bodies and souls of men. He cannot escape being drawn out of the field of purely practical interest into the impersonal pursuit of truth.

The physician of tomorrow must know humanity as well as human anatomy and physiology. He must be trained in the pathology of social conditions as well as in disease processes. He must be as expert in human relationships as in the habits of man's microscopic foes.

The human unit and its reactions are now emphasized everywhere in life—in science, in business, and in politics. The salesman studies the mentality of his prospect; the librarian, the minds of the community. In the same way, the physician, who formerly devoted his time to diseases, now focuses his attention on patients.

Two persons, exposed to the same morbid conditions, will not react in the same manner. Possibly these will be fatal to one while another will escape entirely. Defensive mechanism which has been elaborated in one man may be totally absent in another. The modern physician believes that these peculiarities of the patient are in many cases of more importance than the disease.

No scientist, whether he is a physician or a farmer, believes that the knowledge which he has is absolute. He is ready to admit that what he regards as truth today may, in the light of future discovery, be radically changed tomorrow. He believes that the biologist, following the method of the chemist and physicist, but working with

*Address before Madison County Medical Society at Alton State Hospital, June 5, 1925.

microscopic forms of life, as well as with larger forms, comes nearer to the truth than he who relies upon a mystic feeling for what is "right" or "natural." He believes that the soundness or reliability of a proposed plan of action can be determined only by practical demonstration, not by appeal to popular opinion or by its seeming reasonableness. He believes that the physician who has gone through six years of training in the principles of anatomy, biology, and physiology is better fitted to deal with the human body when it is in difficulty or distress than is the man who has gone through merely six months of training in a school which does not recognize the necessity of thorough training in these fundamentals.

In view of the extensive applications of science, upon which we literally sustain our daily life, it is safe to assume that most people do accept the scientific method. And yet, although the teaching of the sciences has gone forward at an increasing rate with every passing decade, we find in this country today a large number of persons who manifest a growing dissatisfaction with the scientific schools of thought. In the matter of health and disease, more and more people seem to be going over to the side of the pseudoscientist, the chiropractor, the neuropathist, the antivivisectionist, the antivaccinationist, and others.

The reason is not far to seek. It is found in the failure of scientific men to realize the necessity of defending their purposes and methods against the attacks of unscientific people of various kinds who appeal to the public through propaganda and special pleading. The scientists have for the most part been content to let facts speak for themselves.

But in the struggle between knowledge and ignorance, science and superstition, medicine has, and must always continue to lead the way, and you as its standard bearers are serving your communities with intelligence, industry and integrity.

Not alone is it necessary to obtain the interest of men of sound preparation and broad vision for the development of medical science, but it is equally necessary to educate the public up to the point of understanding that just as in the case of astronomy, or of physics, or of chemistry, it is only by the diligent employment of the scientific method that progress is possible; that by that method alone will an understanding ever be

gained of the manner in which the body functions in health and disease.

BIOLOGY OF THE DUCTLESS GLANDS

W. L. SHANK, B. S., M. D.

DE KALB, ILLINOIS

I do not want you to think that I am going to review your biology for you. I am not; I couldn't if I wanted to, for it has been a long time since I studied biology from the text-books. But I do want to refer, briefly, to what seems to be a certain and definite relation between life in embryo, the subsequent development of some of the structures of the body, with special reference to the glands of internal secretion, called ductless glands, and their effect upon the individual, for by so doing we want to lay the foundation for what is to follow.

We will begin with the fertilized egg, or ovum, as it is called in medical works, concerning which Prof. Montgomery has already talked to you. We could go back farther and discuss the internal secretions and metabolism of the lowest form of life, the ameba, a life composed of a single cell, and show the physical and chemical interpretation of embryonal development, the embryonic layers of membrane and their respective roles in the evolution of the organism, but this is not necessary for our purpose. It has been explained to you that the ovum, or fertilized egg, develops into three layers of membrane: the inner layer is called the entoderm; the outer layer is called the ectoderm; and from these two layers of the primitive embryo is derived a third layer called the mesoderm. Now, this third layer, or mesoderm, gives rise to the primitive kidney, or the excretory organ of the embryo, called the Wolffian Body. The mesoderm also develops into the connective-tissue structures, the bones, muscles, organs of excretion and the internal genitals. It has but very little to do with our discussion, except that it gives off small movable lymph cells that are mere accessories to the thymus gland, of which we will speak later in discussing the thymus.

From the entoderm we get all the glands of the digestive system, including the lungs, thyroid, thymus and probably the anterior pituitary; for the anterior pituitary is an unfolding in embryo

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from the upper part of the oral cavity. From the ectoderm we have the nerve and blood supply to the skin and glands. From the ectoderm we also get an unfolding of the central nervous system which becomes the brain and the spinal cord. We will now leave the embryonal development and take up the life of the child in the pre-adolescent stage.

What we mean by a ductless gland is one that does not have an outlet for its secretion through a duct, or a little tubule that leads from the gland itself into a different part of the body. It depends entirely upon the blood permeating the gland for the distribution of its secretion by the blood throughout the body. There are quite a number of ductless glands in the human body, but we have to deal with only four of them: the pituitary, thyroid, adrenals and thymus.

First, the pituitary. This gland is located at the base of the brain in a bony cavity called the sella turcica, in the back part of the sphenoid bone. It is composed of two lobes, a posterior and an anterior; each lobe has a different origin in the embryo and, consequently, a different action. The anterior lobe has its origin in the upward involution of the entoderm from the oral cavity. The main function of the anterior lobe is to govern mentality and control the growth of long bones. Any discrepancy in the function of this gland has its effect upon the individual according to whether the secretion is limited or is secreted in an over amount. A limited secretion in any gland is known as a hypo-condition; an oversecretion is known as a hyper-condition, and they both result in certain characteristics, indicating certain conditions that are just the opposite of each other.

A limited secretion of the anterior pituitary, or a hypo-condition, results in an increase of deposits of fat in the young, which later in life may become a serious obesity. There is an abnormal desire for sweets; lassitude, torpidity and drowsiness are often the first signs of this condition; the stature is small and the skeletal growth is stunted; the fingers are tapered and shortened; usually the hands and feet are small; they are dull, apathetic, backward in their studies and easily discouraged; they lack self-reliance and self-control; the head is often small and the face unintelligent; the distance between the eyes is narrowed; the teeth are malformed and broad;

there are usually spaces between the teeth; the skin is dry and soft and wrinkles on the backs of the hands; they sweat but little even in hot weather; the circulation is poor; the extremities are cold, and it is claimed that this hypo-pituitary condition predisposes to epilepsy.

On the other hand, if we have a hyper-secretion of the anterior pituitary we have an entirely different type of child. They are tall, strong and muscular for their age; their skin is thick: they have large hands and feet; hair grows on the hands, chest and legs; they have a prominent nose, square lower jaw and bushy eyebrows: this type is sagacious, intelligent, self-willed, self-controlled and prudent; they may go to sordid calculations; the teeth are broad and large, especially the central incisors; they are mentally bright and have no trouble in their school work.

The posterior lobe of the pituitary has its origin in a downward protrusion from the brain. It does not give off a secretion, but sends nerve fibers to the third ventricle of the brain and the spinal cord. It acts as a stimulant to the sympathetic nervous system. We find the posterior lobe very active in musicians, singers, actors and poets.

The next one we will take up is the thyroid, which has its origin in the entoderm. In the embryo it is provided with a duct which finally separates from the main body of the organ. The thyroid is found in all vertebrates. It arises at the anterior end of the tongue as a slight pouch. As it deepens it becomes a bi-lobed mass and migrates down the neck. Connective tissue extends into its substance dividing it into a network of cords and later into follicles. From these descriptions you can readily see that these glands are under development before birth and they begin to get active on their own accord as soon as the child is born.

As in the pituitary, we may have a hypo- or hyper-secretion of the thyroid: and, as in the pituitary, different characteristics are found accordingly. In hypo-thyroidism we have puffiness of the face; chilliness and fatigue; obstinate constipation; slow movements, slow pulse, slow ideas and slow speech; whining; sleepy; the outer third of the eyebrows fall out; loss of memory; plumpness; loss of hair; soft and flabby fat. If this condition is well marked in the child it is a condition known as cretinism. In this state all of the conditions are exaggerated. In the

very young the hearing is absent and the pupils of the eyes do not react to light. Sometimes the tongue is large for its mouth and it hangs out over the lower lip; the hair is dry and harsh; the skin is dry and peels off; in mentality it has all the earmarks of an idiot. If this condition is not relieved, either by glandular treatment, or by the thyroid coming into activity of its own accord, it will grow into a condition known as myxedema, which presents a picture later in life of a fat, silly child with a very low grade of mentality. These conditions can be relieved by glandular treatment and in a very short time they develop into quite a different personality.

In the hyper-thyroid type we have quite a different picture. They are live wires, full of vim, vigor and vitality, but of unstable nature; they bubble over with enthusiasm; they have a magnetic personality and are the center of attraction; they are very impulsive, free with their plaudits as well as their censure; they make friends easily and lose them as easy; in children they are subject to tantrums; in adults they are subject to brain storms; they often have attacks of loss of consciousness; they perspire freely; they have trembling of the fingers and hands and are restless during sleep.

Now the adrenals, which are two small glands situated one on each side of the body just above the kidneys. Like the pituitary, they are divided into two lobes: the adrenal medulla and the adrenal cortex. The adrenal medulla has its origin in the mesoderm in the same blast of cells as the sympathetic nervous system. These glands produce a secretion called adrenalin, that regulates blood pressure and acts as a tonic to the sympathetic nervous system. When the amount of adrenalin secreted is below normal it permits a low blood pressure and is known as hypo-adrenia. The characteristics we find in this condition are very noticeable; although these children are fairly well balanced in disposition, they have no tendency to fight; they have respect for law and order and they may go to submission if the deficiency is high grade; they tire easily and are sleepy; they seek vocations but lack initiative; they are moody, backward in school and, later in life, are lazy in business; weak among friends; they have a desire for education and desire to know big words without knowing the simpler ones; they become atheists, but pray in secret; they are radical among radicals, con-

servative among conservatives, easily led, and the personification of indecision.

While, on the other hand, a characteristic of the normal secretion of adrenalin is activity and alertness; they are the aggressors in all undertakings; they are often of the pronounced brunette type, often freckled and a bountiful growth of hair in the hair areas. A characteristic that is easily recognized is often the color of the hair; it is red or auburn.

The adrenal cortex has its origin in the epithelial cells of the mesoderm. It arises from the anterior part of the Wolffian Body and is therefore derived from the same blast in the embryonic layer as the sex cells. The adrenal cortex is the fighting gland and will give support to any undertaking which the conscience tells us is right. It is the gland that sent the boys "over the top" in the late war, for they knew their cause was just and right.

Last, but by no means least, is the thymus. Some authorities refer to the thymus as the most important gland of the developmental stage of the child, both in embryo and in preadolescence. The thymus makes its appearance in the embryo as an involution of the entodermal layer on either side of the pharynx. It is remarkable, also, for the fact that it is constant in the vertebrate series, being found in fishes, reptiles, birds and mammals, and the very fact that the thymus arises from the entoderm is of great significance and has an important bearing upon the influence it has upon the whole human system at large.

The function of the thymus is to supply phosphorus in organic combination during the growth of the body, particularly while the development of the osseous and nervous system demands such a reserve. In other words, it supplies phosphorus to the growing bones and, it may be mentioned in this connection, the calcium furnished for this same purpose also is supplied by the parathyroids. With this idea definitely fixed in your mind you can very readily understand why so many diseases of children are traceable to the lack of these mineral substances to the bony and nervous structures, for a hypo-condition of the thymus produces these conditions, such as rickets, etc. The work of the thymus is definitely traced in embryo where it separates as an independent structure and is divided into two distinct parts. The first part consists of a series of cells of epithelial origin which is a fixed structure. The

second part consists of small movable lymph cells of mesodermal origin, and these, as we said before, are merely accessories to the thymus. The thymus should recede and its work be thereby diminished at puberty, but if it does not it causes a lymphatic hyperplasia. Now, just what do we mean by hyperplasia? We mean the abnormal multiplication or increase in number of the tissue elements of the thymus; that is to say, if this abnormal tissue is present in the thymus at puberty it has not receded as it should. This is particularly noticeable in girls coming into womanhood. The thymus antagonizes the ovaries and when it does not recede at puberty the ovaries are retarded in their development and the girl does not come into womanhood properly, which is known as hypo-ovarianism due to an over-active thymus.

Now, what are some of the signs of hypo- and hyper-secretion of the thymus? In the hypothy-mic type we note a feebleness of resistance to infections of all kinds, especially in children, though this is also noted in adults; comparatively simple and mild disturbances may be followed by grave exhaustion or even death; operations are badly borne; in adults, feeble resistance to fatigue is common, also nervous exhaustion; nervous instability; lack of power of concentration; lack of mental energy and slowness of thought; lack of initiative and the absence of any definite purpose; they have a child-like character of thought, mental under-development, mental infantilism, and even more grave forms of mental disease may be present; frequent occurrences in children of severe asthmatic attacks with difficulty of breathing followed by sudden death. This has been known to physicians for a long time.

The hyper-thymus is a slender type; fair of face, or angel face; the skin is delicately tinted, the "peaches and cream" variety; they have a narrow waist line, rounded limbs, long chest, white, soft, silky hair; small pearl-like teeth; usually knock-kneed or flat-footed. They tire easily, the same as in hypo-adrenia, and are easily led; they are passive, submissive, weak, irresponsible, peevish and often dishonest; they produce drug addicts, prostitutes and criminals. (The thymus antagonizing the interstitial cells in the male produces the sexual pervert.) They are selfish, nervous, fanatic, feminine, childish, and what we call pathological liars.

Now, these things that I have been telling you about are not the outgrowth of the imagination. They are facts arrived at by clinical study and backed up by laboratory findings. All of these conditions, and many more, have been verified time and time again by some of the biggest men and leaders in medical discoveries both in this country and in Europe. It is only within the last few years that this branch of study has been added to the course of study of the best medical colleges in our country, and the younger men who will soon graduate will have a working knowledge of all this that I have been telling you about.

In conclusion I want to give you a thought from the psychological side of this question that may help you fix some of it in your minds. Of course, I do not expect you to look at a child and be able to tell at once what is wrong with it. It takes long, hard study to do that, but this outline may help you to come to some conclusion. Please bear in mind that there is no such thing as a single gland evolvment; if one gland is wrong, most all of the rest of them are wrong in some way or other. Their action is so closely correlated that it is often a difficult matter to tell which one is primarily wrong and which ones are secondarily wrong.

In the first place, we will take the thyroid. When the child is born, the first thing that we expect in the development of that child is perception, which is governed by the thyroid. The next thing we expect is action, which is governed by the adrenals. And the next thing we expect is reason, which is governed by the pituitary. Therefore, we have the thyroid which equals perception, the adrenals which equal action, and the pituitary which equals reason or the association of ideas. Now, we correlate these three and we have perception, permanent according to whether the thyroid is hypo- or hyper-. An adequate thyroid gives a quick memory, but soon forgets. If the adrenals are normal, we get normal action, which accentuates perception plus or minus, according to whether the thyroid is hypo- or hyper-. The pituitary equals reason, which includes perception, and if the pituitary is normal, equals retentative memory and also an association of ideas. In other words, with a normal thyroid you have normal perception, with normal adrenals you have accentuation of perception, and with a normal pituitary you have a

retentive memory and a normal association of ideas.

As an afterthought, a hypo-pituitary individual, when the deficiency begins in infancy, never seems to emerge from that period of their life.

The genius must have hyper-pituitary to have brains, hyper-thyroid to have emotion, and hyper-adrenal in order to have power.

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THE DIAGNOSIS OF EXOPHTHALMIC GOITER AND SO-CALLED TOXIC GOITER*

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The pathology and physiology of the thyroid gland is of necessity closely related to the symptomatology of exophthalmic goiter and so-called toxic adenoma. Before considering diagnostic problems, it is of interest to note the various theories and hypotheses regarding goiter conditions.

ETIOLOGY

Numerous theories and hypotheses have been advanced as to the cause of goiter, the principal ones being 1. *shock or nervous strain*, each of which is emphasized by Crile. This susceptible constitution with a defective nervous system associated with an endocrine unbalance breaks down, and following this there is primary asthenia and a secondary effect on the thyroid gland, at first compensatory in character but, due to the unbalance of the glands of internal secretion, results in exophthalmic goiter; and 2. *iodine deficiency*. Prevost in 1849, Chatham in 1851, and later Plummer laid stress on iodine deficiency as a causative factor in both exophthalmic and adenomatous goiter. The endemic goiter of inland and mountainous regions is well known. It is generally conceded

that the development of adenomatous goiter bears some relation to a lack of sufficient available iodine. Why hyperthyroidism is stimulated in adenomatous goiters by the administration of iodine is uncertain, but clinically it seems to be true. Unquestionably there must be some mechanism that normally regulates the thyroxin concentration of the tissue, and it is highly probable *that the deficiency of iodine initiates the primary condition which results in what might be termed a pathologic compensation.*

Sex. Exophthalmic goiter is seen more frequently in females. The condition when present in males is usually acute and more fulminating. We are familiar with the colloid goiter of puberty, the questionable normal enlargement of the thyroid gland during menstruation, and the history of adenomata frequently dating from a previous pregnancy. Wilson lays stress on sympathetic stimulation, especially of the superior cervical ganglion, producing the syndrome of exophthalmic goiter.

Infections. Gaylord, McCarrison, Plummer and Pemberton emphasize infection as a causative agent. Many patients with exophthalmic goiters date their symptoms from some acute infection, and usually the removal of infected tonsils or other foci brings improvement.

Closely allied is the auto-intoxication theory which assumes the existence of a specific infectious agent or at any rate of specific intestinal flora, the toxic products of which exert their mischief in the thyroid gland. The experiment of Marine and Lembart on fish would tend to advance at least the partial truth of this hypothesis. F. de Guervain emphasizes all intestinal infections as etiologic factors. The old "earth and water" theory, supported by Kocher, is really a combination of the iodine deficiency and infectious hypotheses.

A chemical basis of the condition was stressed in early discussions, the laity pointing out the close association of limestone districts with endemic goiter.

Heredity seems to be a factor. Numerous observers have reported the presence of goiter, adenomatous and exophthalmic, among the members of one family for several succeeding generations. I have seen it present in three generations. Tumors designated by some as

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fetal adenomata may be present at birth, thus supporting the theory of an embryologic rest; adenomata may also develop in a colloid goiter. This type of goiter rarely gives any hyperthyroid syndrome until the patient is past thirty years of age.

Age. Exophthalmic goiter and hyperfunctioning adenomata are conditions of adult life, the former appearing within earlier age limits. Patients with hyperfunctioning adenomata are seldom under thirty years of age; usually they are over forty years of age.

In resume it is sufficient to say that we can not prove any one hypothesis. No one theory will fully explain every case. We cannot say that any one etiologic factor is responsible for all goiters; nor even for all those of one type. From our present knowledge it would seem that colloid and adenomatous goiters are largely the result of what might be termed the neurogenic basis associated with iodine deficiency. Exophthalmic goiter, on the other hand, is more likely to have its etiology in the deficiency of iodine associated with infection.

Distribution. In the United States it has long been recognized that endemic goiter occurs in the Northwest, the region of the Great Lakes, and in the upper Mississippi Valley. Osler stated that goiter is common in the Thames Valley, the Dales, Derbyshire, Sussex, and Hampshire. In Europe there is a high incidence of goiter in the mountains of Switzerland and the adjoining regions of France, Germany, and Austria. McCarrison mentioned its great prevalence in the Himalayas. In general, it might be said that goiters are more common in the mountainous and inland regions than near the coast.

PATHOLOGY AND PHYSIOLOGY

In true uncomplicated exophthalmic goiter marked primary hypertrophy and hyperplasia of the parenchyma are present throughout the thyroid gland. The degree of severity of the clinical condition is paralleled by the pathologic condition of the gland, with perhaps the one exception which may be referred to as the organized exophthalmic goiter. According to Wilson, the relationship between hypertrophy and hyperplasia of the thyroid gland and the clinical symptoms of true exophthalmic goiter is remarkably constant.

This differs markedly from both the gross and microscopic picture of adenomatous goiter. In an adenomatous thyroid there is an irregular, asymmetrical nodular enlargement of the gland. Microscopically there is seen adenomatous tissue surrounded by atrophic and hypertrophic areas of parenchyma containing colloid.

The normal functions ascribed to the thyroid gland are 1. the control and stimulation of tissue in general, 2. the control and stimulation of functional processes of tissue, 3. neutralization of toxic substances produced in the normal metabolism of the tissue, and 4. assistance in the defensive action of the organism against bacterial poisons. I mention these separately and distinctly though I shall only refer to thyroid secretions as one consistent entity which, though better for discussion, is not scientifically correct.

DIFFERENTIAL DIAGNOSIS

Exophthalmic Goiter: Chief Complaint: Patients suffering from exophthalmic goiter often present themselves for examination not knowing that they have a goiter. They complain of "being a little nervous, headaches, weakness, especially in the knees, diarrhea, and other symptomatic troubles. When asked directly how they feel, they will usually answer "Fine."

The onset of symptoms often dates from some previous illness or psychic shock. There may be a history of accumulative infection such as chronic tonsillitis or chronic constipation. On questioning, a definite syndrome derived from the catabolic nature of the disease may be revealed. Enlargement of the thyroid gland may or may not have been noticed. Appetite is always increased in true uncomplicated exophthalmic goiter, except in marked crisis. There is a definite progressive loss of weight in spite of the increase of appetite. There may be certain gastric symptoms of vomiting and diarrhea, depending on the stage of the disease or the proximity to crisis.

Central Nervous System: Both the central and sympathetic nervous systems are directly affected. A tremor, usually characterized as fine, develops. Patients with exophthalmic goiter are hyperstimulated, nervous, excitable, emotional, unstable, irritable, restless, imaginative, cannot sleep, and have bad dreams. Because of the emotional instability it is comparatively easy to make such patients laugh or cry, and it is

difficult to appeal to their reason. In crisis there is a typical delirium and psychopathic state.

The mental and nervous picture is twofold, as are the manifestations in the other systems. It is not that of a true hyperthyroidism, as often stated, but rather hyperthyroidism plus a superimposed toxemia. Whether this is due to the poisonous products of excessive catabolism improperly eliminated or to a toxin produced by the thyroid in addition to its pure thyroxin is uncertain. At any rate experience has shown that it is the poisonous extract or toxin, whatever its source, that produces the crisis and makes patients with exophthalmic goiter such poor surgical risks. Clinically this toxic picture may be eliminated, though not permanently, by the administration of iodine. Almost pathognomonic of the condition is the manner in which the patient assumes numerous and varied positions, giving the impression of posing. A marked change may be produced in the clinical picture of these patients in a few days by the administration of iodine, used, however, only as a palliative measure.

Gastrointestinal System: The specific picture of exophthalmic goiter may also be overshadowed by the gastro-intestinal complaint. Diarrhea and vomiting are really a part of the syndrome of crisis or impending crisis, but these are sometimes so pronounced that they obscure the rest of the picture of exophthalmic goiter. I know of several instances where exophthalmic goiter patients have had complete investigations of the gastrointestinal tract by excellent internists before exophthalmic goiter has been recognized as the causative factor.

Cardiovascular System: The heart is rapid and the force of the beat is increased. Palpitation, dyspnea, swelling of the ankles, perhaps irregularity of the heart, fibrillation and marked pulsation of the thyroid vessels are present. There may be definite thrills and bruits at the superior and inferior poles of the thyroid gland. The syndrome becomes more marked as this condition progresses. The picture is that of hyperstimulation plus toxemia. The blood pressure, both systolic and diastolic, is high, but more diagnostic than this is the high pulse pressure. Headache, the result of increased pulsation and toxemia is often present. Marked

arrhythmia, commonly in the form of auricular fibrillation, is usually found in crisis.

Genito-urinary System: Mild glycosuria is often present, and there may be frequency, nocturia and burning associated with a mild nephritis. The picture is due partly to the irritability of the central nervous system and partly to the toxic effect on the kidney.

Respiratory System: The dyspnea is not obstructive in pure exophthalmic goiter, but is due to the effect of the toxemia on the sympathetic and central nervous system, as well as on the cardiovascular system. In crisis there is sometimes a hypostatic pneumonia or hydrothorax which may simulate, either partially or completely, primary chest disease. Here we have to rely chiefly on the history. The respiratory symptoms also improve on iodine.

Skin and Other Conditions: The exposed surface of the skin may be bronzed or resemble that of Addison's disease. It is moist and warm. The patients complain especially of excessive perspiration and of a definite heat intolerance; they are usually rather plethoric.

The eyes may or may not show exophthalmos. There is usually what might be termed a fairly frank stare preceding the development of exophthalmos, which may appear early or late and is not always an index of the toxicity of the patient. Patients often complain that their eyes hurt and feel constantly strained. The finger nails are often suggestive in both exophthalmic and adenomatous goiter, though perhaps more marked in exophthalmic goiter. The cuticle is separated back farther than usual and extends out at an angle from the matrix of the nail. The degree of muscular weakness may be best measured in the quadriceps and is elicited by having the patient step up on a chair.

The basal metabolic rate is very high when the patient is in crisis, often going above one hundred. The basal metabolic rate is not always a criterion as to the degree of toxicity, but by clinical observation this can usually be estimated rather closely.

At the outset the gland may be hardly palpable or may be enlarged slightly but with the progress of the disease it becomes enlarged and hardened and may resemble one with adenomata. It should be remembered that exophthalmic goi-

ter may be substernal, although this occurs much less frequently than in adenomatous goiter.

Course: The uncomplicated case of exophthalmic goiter runs a rather typical course, wave-like in character with exacerbations and remissions. The condition is usually progressive for about eight to nine months ending in a crisis, and then, if the patient does not die, there is a remission of a few months followed by another exacerbation. The condition may become worse with each successive crisis, or, as is most frequent, each succeeding exacerbation may be milder. Thus, the thyroid may seemingly wear itself out and the patient recover from the exophthalmic syndrome, but usually by this time we have nothing but a human wreck.

Toxic Adenomatous Goiter: Chief Complaint: Patients with adenomatous goiter often present themselves knowing that they have a goiter, but not connecting the hyperthyroid syndrome with their complaint. Once having become hyperthyroid, the patient grows slowly but steadily worse until usually the tumor is removed or death ensues.

There may be multiple adenomata or a single adenoma, which may or may not be encapsulated. Either multiple or single tumors may produce a hyperthyroid condition; according to my observation, an isolated tumor is more apt to be virulent. Hyperthyroidism in a patient with an adenomatous goiter may develop early, late, or not at all.

The majority of adenomata originate in colloid goiter; some develop from embryologic rests. There are two theories as to the action of adenomatous goiters which have become hyperfunctioning: 1. that the adenomatous tissue elaborates and delivers thyroxin; or 2. that it in some way, perhaps as a foreign body, stimulates the surrounding thyroid tissue to hyperfunction. The correct theory seems as yet to be an open question. At any rate we know in the adenomatous hyperfunctioning thyroid that the adenoma is the offender, because by simple enucleation, where the adenoma is encapsulated, the condition may be relieved. The hyperthyroid state often has its origin in the administration of iodine. Adenomata, though quite frequently present, rarely become hyperfunctioning until a patient is past the age of thirty, unless iodine is administered.

The onset is slow though progressive. The symptom complex is similar to a pure hyperthyroid state. The appetite may or may not be increased, perhaps more frequently the latter. The pulse becomes rapid. There is dyspnea, often obstructive. There may or may not be cord paralysis, depending on the position of the growth. The blood pressure is markedly increased, the pulse pressure is also high, though not so high as in exophthalmic goiter, and does not return to normal after operation. There is no crisis with vomiting and diarrhea, such as is characteristic of exophthalmic goiter. At times there may be an exhaustion type of delirium; there may also be vomiting which is a reflex manifestation of obstructive dyspnea. In the late stages marked secondary degeneration is found throughout the system, especially in the cardiovascular system. The basal metabolic rate never goes so high as in exophthalmic goiter.

The patients are nervous, lose weight steadily, develop a tremor, and perspire freely. The toxic picture with insomnia, posing, emotional instability, and so forth is not present, although the patient may be very weak and depressed. Clinically, the hyperfunctioning adenomatous goiter in its last stages with its marked generalized effect may closely resemble exophthalmic goiter, although by careful clinical observation they can usually be differentiated, especially where there are degenerative processes such as a cyst, or calcareous deposits.

Exophthalmic goiter and toxic adenomatous goiter are two closely related diseases of the thyroid gland, which through their pathologic effects produce systemic reactions and become systemic in nature. These two conditions differ in their pathologic pictures and physiologic results. The syndrome of hyperfunctioning adenomatous goiter has been produced in a case of myxedema by massive doses of desiccated thyroid and thyroxin. There may be a combination of the two conditions in the same gland, just as either condition may be superimposed on the colloid goiter.

In exophthalmic goiter there is a diffuse primary hypertrophy and hyperplasia of the parenchyma of the gland as differentiated from the adenomatous goiter with one or more nodules surrounded by atrophic and hypertrophic areas of parenchyma containing colloid. Often the

colloid character of the goiter may overshadow the adenomata, leading to an erroneous diagnosis, if based on observation alone. Proper palpation of the gland will usually eliminate this error. Inspection and palpation of an adenomatous goiter reveal an unsymmetrical enlargement of the thyroid gland consisting of either a single, small definite adenoma or a large, nodular tumor composed of several adenomata. This differs materially from the diffuse, even enlargement of the gland in exophthalmic goiter.

According to statistics from the Mayo Clinic 78 per cent. of the patients with adenomatous goiter are over forty years of age at the time of examination while 50 per cent. are over fifty years. The reverse is true in exophthalmic goiter, the average age being thirty-seven, with 85 per cent. of the patients under fifty and 61 per cent. under forty years.

The average duration of adenomatous goiter is sixteen years before the onset of symptoms while in exophthalmic goiter it is only four years. Exophthalmic goiter runs a course, wave-like in character with cycles of exacerbations and remissions, while in adenomatous goiter the course is progressively downward, once the gland begins to hyperfunction.

The metabolic rate in patients with adenomatous goiter is consistently lower than in those with exophthalmic goiter. The blood pressure, both systolic and diastolic, is high but the pulse pressure is consistently lower in adenomatous goiter. After operation the systolic pressure remains consistently high, while in exophthalmic goiter after two to six months it usually returns to normal or lower, even in a case with marked systemic effect. Systemic fatigue, especially cardiac, is more pronounced in adenomatous goiter, perhaps due to the associated hypertension and consequent peripheral resistance which gives an added strain to the heart action. In auricular fibrillation the pulse rate at the wrist may not be a true index of the heart rate.

Recently, Plummer has advised against the use of a cardiac stimulant such as digitalis. In both types of goiter there is a tendency for enlargement of the heart, at first perhaps compensatory. The degree of enlargement is more marked in adenomatous than in exophthalmic goiter. There is a marked absence of the bruit and thrill, especially of the superior vessels, of exophthalmic goiter in cases of adenomata. The

carotid bruits, pronounced in the region of the inferior vessels, may lead to confusion, especially in the case of adenomata with marked myocardial degeneration. According to some observers there may be a bruit in colloid goiter. I have never been able to elicit a true bruit of the superior vessels in colloid goiter. There may be pulsation of the gland in adenomata but not the diffuse thrill of exophthalmic goiter. The pulse is rapid in both conditions, perhaps more rapid in the earlier stage of exophthalmic goiter.

The picture of the nervous condition is quite different in the two syndromes. As previously mentioned, there is marked absence of the psychopathic, emotional, restless state in adenomatous goiter. Though the adenomatous patient may be markedly stimulated, there is not the crisis in adenomatous goiter that there is in exophthalmic goiter with the psychic picture previously described or the gastro-intestinal complex of vomiting and diarrhea. Occasionally there may be a reflex vomiting with obstructive dyspnea in adenomatous goiters. Pneumonia and hydrothorax, found in exophthalmic goiter, are absent in adenomatous goiter. There may be marked obstructive dyspnea in adenomatous conditions with the trachea pushed considerably out of alignment, vocal cord paralysis, and chronic passive congestion of the face, all of which are consistently absent in exophthalmic goiter, with perhaps the one exception of the rare substernal exophthalmic goiter. The stare and exophthalmos, at one time or another usually present in exophthalmic goiter, are absent in pure adenomata with hyperthyroidism. There is a constant, progressive, but very slow, loss in weight in adenomatous goiter, as compared to the rapid loss in exophthalmic goiter. The muscular weakness as measured by the strength of the quadriceps is more marked in exophthalmic goiter, though present in both types.

The picture of exophthalmic goiter may be greatly changed so as to resemble that of a hyperfunctioning adenoma by the use of iodine. This has been done at times by the medical profession and by numerous "goiter cures;" which are on the market.

The postoperative myxedema, formerly spoken of so frequently, was probably, in some instances at least, due to operations having been performed in cases of thyroiditis rather than in true exophthalmic goiter. Pemberton, Sistrunk and like-

wise Crile, resect two-thirds of the gland with few post-myxedematous pictures. Where a thyroiditis 3 (on a scale of 4) is reported by the pathologist, myxedema will undoubtedly follow operation. The condition would also have occurred if operation had not been performed.

In exophthalmic goiter of several years' duration, what may be called an organized gland, closely resembling an adenomatous gland or containing adenomata, often results. Patients presenting this condition may gain in weight. Their basal metabolic rate remains around thirty or forty on the administration of iodine. The product here seems purer and the syndrome more that of a true hyperthyroid state. At any rate, the patients seem to have adjusted themselves to the additional toxin. The clinical picture still remains that of an exophthalmic goiter though not so pronounced as in the earlier stages. The complicated condition of a mixed gland is to be considered in preoperative treatment.

In conclusion, the manifestations of exophthalmic goiter are those of a pure hyperthyroid syndrome plus a superimposed toxemia, while those of so-called toxic, or, as it is preferably designated, hyperfunctioning adenomatous goiter are those of a pure hyperthyroid state.

DISCUSSION

Dr. Joseph K. P. Hawks, Bloomington: It is a very admirable thing that the Medical Section of the State Society is favored by a paper on goiter. This is particularly true because you men see goiters before the surgeons do. There are a good many things about goiter that the internist should recognize. In the first place, we don't always recognize goiter when we see it. And in the next place, we sometimes see goiters that are not present. I think the doctor has given us a very carefully worked out differentiation between the two toxic types of goiter—the toxic adenomata and the true exophthalmic type.

We are apt to become rather verbose and spread ourselves out considerably when we classify goiters. The more simple classification we can arrive at the better for us and the better for our patients. I think the doctor has a simple classification of toxic adenoma and the exophthalmic goiters.

One thing about the exophthalmic goiter that the doctor spoke of is the fact that the exophthalmic goiters occur in cycles. He spoke of the cycle of nine months. Dr. Charles Mayo said it is a good deal like a chronic appendix. It has its remissions and exacerbations. The time to treat those cases surgically is

not during the exacerbation but in the remission. The same as with an appendix case.

Another thing about exophthalmic goiter that is particularly dangerous, particularly in treating it from a surgical standpoint, is the condition when we have the pronounced mental changes verging on hallucinations and the cases in which we have nausea and vomiting.

Last Fall it was my privilege to drop into Dr. Andre Crotti's clinic at Columbus. He had a case he was going to operate on. The interne told him: "The patient started to vomit this morning." He said, "I won't touch it at all." Those are the two dangerous things in the exophthalmic type.

Another thing is the time of life in which these two conditions develop. The exophthalmic goiter is typically the type of younger life.

The adenomatous goiter comes to hyperfunction later in life. We frequently have patients come to us with a story like this: "I am getting short of breath and I am awfully nervous." Ask them about the goiter. "I have had that for twenty years. It never bothered me any. That cannot be the cause." But it is.

Another thing the doctor brought out is the difference in some of the treatments that are given these two different types. The exophthalmic improves under iodine. The adenomatous type becomes worse under iodine. That is a danger we have to deal with, especially with quack medicine people who are furnishing people everywhere with goiter cures which contain iodine. It may help one type and makes another type worse.

Another thing, the use of iodine is a little dangerous, when you consider the work which has been done in Ohio on children by Marine and others—feeding the children in the schools iodine.

When adults get enthusiastic over the use of iodine they may harm themselves by taking it, especially if they have the type that in later adult life is beginning to hyperfunction.

Basal metabolism is something that is of great value in the study of goiter, and yet it has its limitations. I don't think we can be guided entirely by our metabolic rate in our summing up or estimation of a case of hyperthyroidism. We have to study our cases individually. Some cases may have a high metabolic rate and not be as toxic as the cases that have a lower metabolic rate.

He spoke about digitalis. I have always found that digitalis is a pretty good thing in these cases. Of course, with a heart that is badly crippled, digitalis sometimes does more harm than good. You all know that better than the surgeons do.

Another thing is the use of morphin. It is the one thing we can depend upon to hold our goiter cases down just as much as digitalis.

Dr. Maximilian Kern, Chicago: Dr. Hawks very correctly remarked that we have to be somewhat verbose in our classifications of goiter. In private practice I believe you will agree with me that it is quite an impossibility to draw sharp lines of demar-

cation between the conditions arising from a hyper-functioning thyroid. When we get an adenomatous condition of a thyroid that is hyperfunctioning according to all tests and there is evidence of toxicity, that is tantamount to an indication for treatment for exophthalmic goiter.

I disagree with Dr. Hawks as regards basal metabolism. I think basal metabolism determination is an important and safe guide provided that it is accurate. There is no likelihood of making a mistake. In institutions, where the patient is prepared for twelve hours at least under proper conditions and at least three determinations made, I think that the determined basal metabolism is an absolute indication of the condition of the thyroid. If this is accepted as true, and it is by many, then it immediately raises the question whether iodine medication is indicated or not by the particular conditions.

During the meeting of the Association for the Study of Goiter, in Bloomington, there was a strong spirit of accord between surgeons and internists as to which types of goiter cases were surgical and which medical. But there is no general consensus of medical opinions as to when iodine should be used in goiter cases and when not. Only a few have dared venture their opinions against the indiscriminate use of iodine for every kind of goiter and thyroid condition.

Dr. Israel Bram, of Philadelphia, who has written as much as anybody on the medical treatment of goiter, is absolutely opposed to iodine medication as a routine. Bram's opinion on non-surgical treatment of thyroid conditions should, I believe, be accepted as the sum total of experience of one of the leading authorities in this field of clinical research.

As Sajous remarks, even patients with chronic goiter of the endemic type often do not bear iodine preparations well and it acts as a general toxic. I myself have found in a series of over two hundred unselected cases that whenever iodine had been administered for any length of time, there was invariably more or less exaggeration of the heart rate.

W. A. Plummer has shown that if a goiter contains adenomatous tissue the administration of iodine is not a safe procedure and may irritate a hyperthyroidism after some months' use or after a longer period with small doses. This fact should impress us greatly with the necessary care in iodine therapeutics.

There are many reports in the literature where thyrotoxicosis was produced by the use of iodine preparations in the form of iodized salts obtained in groceries, department stores, and drug stores. This is particularly true in cases of so-called border line cases of exophthalmic goiter and it is even not excluded in cases where iodine seems indicated, especially when the patient is not carefully watched while being fed iodine preparations.

With endemic goiter so universally prevalent, and

in view of the lack of agreement in the medical ranks generally as to when iodine is indicated, I think that the Section of Internal Medicine of this State Medical Society should appoint a committee to recommend some means by which this Society could educate, or perhaps better still uneducate the profession and the public in regard to the promiscuous use of iodine. I am aware of the fact that it would require a great deal of courage to go on record with such a radical idea, but I am convinced that this would be a necessary step in order to benefit the sufferers from various thyroid and "quasi-thyroid" diseases. I have only recently come across a case of a young woman who was the mother of a child less than one year old. She complained of dyspnea, rapid heart action, constant fatigue, loss of weight and extreme nervousness. All those symptoms dated back to her third month of pregnancy and the condition was getting constantly worse. There was a marked loss of weight and a B.M.R. of plus 45. Upon investigation it was found that she had read in the newspapers about some recommendation of iodine medication for expectant mothers, and had started to take iodine salts as soon as she became pregnant, without consulting her physician about it. The interruption of iodine medication promptly relieved all symptoms including the high basal metabolism.

I have had several similar cases of more or less toxicosis and tachycardia from the continued use of iodine in small doses, and I am convinced beyond a doubt that iodine acts as a general toxin and that it is not always taken up by the thyroid gland.

Until such a time when it will be possible to come to an agreement as to the exact and easy differential diagnosis between the various types of goiter, I think iodine should be handled cautiously and should be left to the physician who knows when and to what extent it is indicated, and who has the opportunity to detect and guard against its deleterious effects.

In closing I want to congratulate Dr. Bowen for his very painstaking and conservative presentation of this very complex and interesting subject.

Dr. L. C. Gatewood, Chicago: I wish to second what Dr. Hawks has said concerning the need of the medical man for a clear understanding of this phase of the goiter question. He usually sees the case first. During the last few years it has been the custom at the Cook County Hospital to admit the goiter cases to the medical wards for observation. When admitted directly to the surgical service they have very commonly been transferred to the medical ward and the internist has collaborated with the surgeon in their management.

Our experience with iodine there has, I think, tallied with that elsewhere. In the first place iodine, while it does give a very striking improvement in true exophthalmic goiter is usually of only temporary value. One of the greatest dangers that has come in general from the use of iodine in exophthalmic goiter has come from the marked

improvement which has persuaded the patient to refuse operation. We feel when we put an exophthalmic goiter patient on iodine, that the patient should be informed that the results are temporary and that we are not proposing it as a medical treatment to take the place of operation.

Otherwise, if we get a striking improvement and then advise that patient to be operated on after a short time, the patient will say, "No, I am so much better I will go on this way."

In cases where iodine has been used over considerable periods of time it has been found that there is a sudden decrease both in symptoms and metabolic rate followed by a period of fairly uniform lowered level and then a gradual rise. If those patients refuse operation on the basis of iodine therapy they are likely to come back to where they were and very likely to be eventually worse, and you are fortunate then to get even a temporary benefit from resuming the iodine.

In the adenomatous type of goiter iodine is of little or no value and is likely to do harm. We feel therefore that the iodine is of value only where we expect to have the patient operated upon within a comparatively short time, when the harm that might come to an adenomatous goiter will be negligible because it is a slow change, and where the improvement that comes with an exophthalmic goiter can usually be gotten within a week or ten days. We regard this not as a medical substitution for surgical treatment, but as a preparation for operation.

As to the heart conditions, it is very comforting to know that some of the fibrillations which occur in adenomata will disappear after operation and that some of those patients who seem to have a well marked heart muscle damage and who are apparently rather bad surgical risks, show a very considerable cardiac improvement after operation and are not in such bad shape for operation as might otherwise be thought.

Dr. Dean F. Stanley, Decatur: Quinidine has been effectual in auricular fibrillation of goiterous hearts if given in increasing doses from the initial dose of three grains, the dosage varying from 25 to 35 grains, or even greater in a day. It has proved very efficient in controlling and stopping auricular fibrillation of goiterous hearts, especially after digitalization.

It has been found usually that after the heart rhythm becomes normal the dose can be markedly decreased. It is usually necessary to keep on with a small daily dose, usually not greater than 3-8 grains.

Dr. James H. Hutton, Chicago: This is an interesting and important subject. I am sorry it has not provoked more discussion. When a goiter patient comes under observation one of the first things we should do is to decide whether an adenoma is present. If we can decide certainly that one is present we should not use iodine at all.

If we are uncertain on that point iodine if given at all should have the very closest supervision.

Dr. Wilbur L. Bowen, Peoria (closing): As I mentioned in my paper it is often difficult to differentiate adenomatous goiter with hyperthyroidism from exophthalmic goiter; especially where the clinical findings are those of adenomatous goiter plus hyperthyroidism, and yet we have a clinical picture presenting many or most of the features of exophthalmic goiter. I believe that we are here dealing with what might be termed a mixed goiter.

In my own experience I have been able to prove this partially. As has been suggested in the discussion these patients often develop a typical exophthalmic goiter crisis following operation. We have been able usually to eliminate this by giving iodine in progressive doses over a short interval before operation; with the idea in mind that the adenomata present would not be markedly affected before operation and the exophthalmic goiter crisis would be prevented. This to date has seemingly eliminated this type of crisis. It should be borne in mind that I am not here advising the use of iodine promiscuously in all types of goiter preoperatively, but that I am speaking of the complex picture I call mixed goiter.

I am in favor of the use of iodine merely as palliative treatment and believe that its use is mostly limited to preoperative treatment in exophthalmic goiter according to our present knowledge. I did not, in my paper, mean to convey the idea that iodine is specific in the treatment of exophthalmic goiter. If I conveyed that impression I wish to correct it. I do know that iodine is palliative and has reduced the incidence of crisis which makes exophthalmic goiter such poor surgical risk; and it does seem specific (for the time at least) in the treatment of the various systemic reactions, such as vomiting, pneumonia, etc., which are really a part of the syndrome known as crisis. I may illustrate this by a case in question which I saw in consultation.

A girl twenty-one years old, single, had been nervous, fidgety, had heat intolerance, palpitation, swelling of neck, loss of weight, etc., for one year, giving the typical syndrome of exophthalmic goiter.

At the time I saw her she was near a crisis, pulse 120, very nervous, irrational, perspired easily, had diarrhea for two or three days and vomiting. She was put on Lugol's solution. On the third day she felt much better, diarrhea and vomiting had ceased, and on the eighth day pulse began to drop, assuming the level of 100, and she began to gain weight. She was not put to bed. She was operated on at the end of the second week from time treatment was started, doing a bilateral partial resection of both lobes of thyroid. Her recovery was uneventful, and she was discharged from hospital on the twelfth post-operative day.

However, a word of warning is necessary here. It should be remembered that iodine seems to lose its effect when continued over a long period of

time, and the pulse may again rise; though we usually never have a return relative to original severity (as long as iodine is given in sufficient quantities). However, the picture assumes more that of adenomata with hyperthyroidism giving what is usually referred to as an organized gland. Something of the same picture we have following ligation.

I do not advise long continuous use of iodine.

At the Mayo Clinic the surgical mortality in exophthalmic goiter took a marked drop with the use of iodine, and when digitalis was no longer used in the treatment of adenomatous goiters with myocardial changes. This may be a coincidence but does not seem to be.

Again I want to say we do not yet know all about the physiology of exophthalmic goiter or the pathology. Until we do know that, it will be impossible to say whether exophthalmic goiter is a medical or surgical case. So far as we know now, it is surgical, although the results are not always what we want them to be.

I have not had any experience with the use of quinidine at all.

Dr. H. S. Plummer advises against the use of digitalis. He believes that the condition of the heart is due to the increased strain which is produced by the catabolic syndrome which is the result of increased hyperthyroidism and that digitalis adds to the poisonous effect on the heart.

I believe that the basal metabolic rate is a very good criterion as to the condition of the patient when taken with the clinical picture but there are many possibilities for error, as the doctor stressed. You can take the average markedly psychoneurotic patient, give her a B. M. R. and obtain a reading of 100. You can take that same patient and get 20. Not one B. M. R. but several consecutive B. M. R.'s are more of a true index.

In regard to the classification, I believe as the doctor suggested that the simpler we can make these things the better.

I want to stress again, in conclusion, the fact that I believe that exophthalmic goiter is a condition of hyperthyroidism plus a toxemia, and that the crisis is due to the toxemia rather than to hyperthyroidism, whereas in adenomata you get more of a pure hyperthyroid syndrome.

I have fed a case of myxedema on increasing doses of desiccated thyroid and have gotten identically the same picture as that of adenomata with hyperthyroidism.

PROPOSAL DECLINED

She—"I would not think of marrying such an intellectual monstrosity and physical misfit as you are, you numbskull? Do you get me?"

He—"Well, from the general trend of your conversation, I should judge not."—American Legion Weekly.

THE EXCHANGE PROBLEM

A friend tells this one on "Sarg." When Sarg was in France he and a companion commanded an ancient automobile, the first that he had ever operated. They got along pretty well for a time but finally had to get a new battery. They located one. "What is the charge for this battery?" inquired Sarg. The automobile man misunderstood. "One and one-half volts," he replied. Then Sarg turned to his companion. "How much is that in U. S. money?" he asked in a whisper.

HOW TRUE!

There was a faith-healer of Deal,
Who said, "Although pain isn't real;
If I sit on a pin
And it punctures my skin,
I dislike what I fancy I feel."—Anon.

Society Proceedings

ADAMS COUNTY

October 12, 1925. The meeting was preceded by a dinner at the Elks' Club in honor of our guest, Dr. Arial W. George, Professor of Roentgenology, Tufts Medical College, Boston, Mass. Thirty-nine physicians and their wives were present.

The regular meeting was held at the Chamber of Commerce and was called to order by the President at 8:30 P. M. Thirty members and ten guests were present.

Dr. Arial W. George of Boston gave an illustrated address on "The Present Status of Gastro-Intestinal Tract Examination by X-Ray." This was, without a doubt, the most interesting address on a purely roentgenological subject that has ever been presented before the society. Drs. Swanberg, Jurgens, Aldo Germann and Center discussed the paper. Dr. Albert Garver read an obstetrical case report and Dr. Walter Stevenson showed motion pictures of the medical picnic.

The Secretary read a communication from Dr. W. E. Shastid, Secretary of the Pike County Medical Society, inviting the membership to a meeting of that society at Barry on October 22. Dr. Swanberg made a motion that Dr. Arial W. George of Boston be made an Honorary Member of the Adams County Medical Society. Dr. Nickerson amended the motion to include a rising vote of thanks for Dr. George's splendid address to the society. Seconded and carried.

The meeting adjourned about 11:10 P. M.

HAROLD SWANBERG, M. D.,
Secretary.

COOK COUNTY

CHICAGO MEDICAL SOCIETY

Chicago Medical Society regular meeting, October 21, 1925.

1. Idiopathic Ulcerated Colitis with Special Reference to Its Etiology and Treatment—Arch H.

Logan, Mayo Clinic, Rochester, Minn. Discussion—Ralph C. Brown.

2. Amebic Dysentery—A. A. Goldsmith. Discussion—Chas. A. Elliott.

Regular meeting, October 28, 1925.

1. The Kielland Forceps or Manual Rectification in the Management of Persistent Occipito-Posterior Positions—C. S. Bacon. Discussion—Chas. B. Reed.

2. The Use of Glucose Solutions for the Treatment of Toxemias of Pregnancy in the Cook County Hospital—D. S. Hillis. Discussion—Jos. L. Baer.

Regular Meeting, November 4, 1925.

1. Newer Developments in Laryngology—Mr. Philip Franklin, London, England. Discussion—Norval Pierce, J. Gordon Wilson, Harry Pollock.

2. Present Treatment of Fractures—Sir W. Arbuthnot Lane, London, England. Discussion—Wm. Cubbins, Kellogg Speed, Philip Kreuscher.

McHENRY COUNTY

The second regular meeting of the McHenry County Medical Society was held October 19 at the Court House, Woodstock, Illinois, in conjunction with T. B. Clinic of Illinois. Examinations were made free of charge to all patients brought before the Clinic.

There was no lecture at this meeting and the necessary election of officers was held with the following results: President, C. F. Baccus, Woodstock; vice-president, C. W. Bailey, Hebron; secretary and treasurer, A. V. Lindberg, Crystal Lake; delegate, C. F. Baccus, Woodstock; alternate delegate, G. H. Pfeuger, Crystal Lake; censors, Glenn Wright, Woodstock, H. L. Seelye, Harvard, and R. M. Curtiss, Marengo.

G. F. BACCUS, Secretary.

OGLE COUNTY

The Ogle County Medical Society met in regular session under the auspices of the Ogle physicians in the High School Building at Leaf River, on Wednesday, October 28, 1925. President J. C. Akins, of Forreston, called the meeting to order. Roll call found nine members present and four visiting guests. Visitors: Drs. A. W. Christenson, J. E. Tuite and Edw. H. Weld, of Rockford. Minutes of previous meeting were read by the secretary and approved. Although the attendance was small, owing to the bad weather and roads, a real pleasant meeting was held.

Dr. Herman L. Kretchman, of Chicago, who was to read a paper, missed his train and was not able to be present. Dr. W. J. Rideout, of Freeport, read a most excellent paper on value of "Ophthalmoscopy as an aid in diagnosis of some general diseases." This paper was discussed by Dr. Edw. H. Weld of Rockford.

The following officers were duly elected for the coming year: President, J. C. Akins, Forreston; vice-president, J. M. Beveridge, Oregon; secretary-treasurer, J. T. Kretsinger, Leaf River; delegate to State Medical Society, W. E. Kittler, Rochelle; al-

ternate, H. E. Bowerman, Leaf River; censor for three years, W. E. Kittler, Rochelle; legislative committee, J. M. Beveridge, Oregon, W. E. Kittler, Rochelle, and C. J. Price, Mt. Morris.

The Secretary read a card received from Mrs. Stevens: "We sincerely appreciate your sympathy and beautiful flowers in memory of Dr. Stevens."

The following letter was received from Dr. Sidney D. Wilgus: "Thanks for the invitation to attend the Ogle County Medical Society meeting at Leaf River tomorrow. Unfortunately, Dr. Fell, who is associated with me, is on his vacation and I can not very well get away. I would like particularly to discuss Dr. W. J. Rideout's paper for the reason that the ophthalmoscope is of great importance in the examination and diagnosis of mental and nervous diseases. In fact, we find it satisfactory to use the ophthalmoscope in every case we see."

Dr. A. E. Bogue, of Rochelle, was elected to membership.

Motion made by Dr. Beveridge—That the Society, by a rising vote, express their appreciation and thanks for Dr. Rideout's paper. Carried unanimously with applause.

Motion made by Dr. Beveridge—That the Society hold a night meeting at Oregon during the month of January, 1926. Carried.

Meeting was adjourned to meet in January, 1926.

J. T. KRETSINGER, Secretary-Treasurer.

Marriages

STUART BROADWELL, JR., to Miss Mary Temple Smith, both of Springfield, Ill., in September.

WALDO B. ISON, East St. Louis, Ill., to Miss Henrietta Weinzell of St. Louis, July 18.

THEODORE FERDINAND RUTHER, Effingham, Ill., to Miss Alice Faust of New Orleans, August 18.

RICHARD MARTIN RUTLEDGE, Peoria, Ill., to Miss Dorothy Phillips of Delavan, September 19.

CLARENCE FISCHER, to Miss Madeline Cashin, both of Peoria, October 6, 1925.

Personals

Dr. Paul R. Cannon has been appointed assistant professor in pathology at the University of Chicago.

Dr. Karl A. Meyer has been appointed to a professorship of clinical surgery at the University of Illinois.

Dr. Charles F. Read, formerly superintendent of the Chicago State Hospital, has been appointed head of the department of nervous and mental diseases, Loyola University Medical

School, and has taken up private practice in nervous and mental diseases in Chicago.

Dr. Elbert L. Damron, Effingham, has been appointed physician for the Pennsylvania Railroad to succeed the late Dr. James H. Walker.

Dr. Malcolm L. Harris, chairman of the Judicial Council of the American Medical Association, was installed as president of the Chicago Medical Society at a banquet in the Hotel La Salle, October 14.

Dr. Frank Billings laid the cornerstone of the Albert Billings Memorial Hospital at the University of Chicago, October 3. Dr. Henry A. Christian, professor of medicine, Harvard University School of Medicine, Boston, delivered an address.

Dr. Arial W. George, Boston, addressed the Central Illinois Radiological Society, Quincy, October 12, on "The Present Status of the Gastro-Intestinal Examination by Roentgen Ray." A dinner and reception will be given preceding the meeting.

Prof. Alfred N. Richards, Ph.D., professor of pharmacology of the University of Pennsylvania School of Medicine, Philadelphia, addressed the Chicago Society of Internal Medicine and the Institute of Medicine of Chicago at a joint meeting at the City Club, October 26, on "Experiments Concerning the Nature of the Function of the Kidney."

Among the speakers at the recent annual meeting of the Medical Society of the Missouri Valley, St. Joseph, Mo., were Drs. Robert H. Babcock, S. R. Slaymaker and Vincent J. O'Connor, who spoke on "Functional Disorders of the Heart," "Electrocardiograph Interpretations" and "Diseases of the Kidney," respectively.

Dr. Arthur J. Cramp, director, Bureau of Investigation, American Medical Association, spoke before the Chicago Laryngological and Otological Society, Hotel Sherman, October 19, on "Fake Aids for Hearing," illustrated by lantern slides, and Harvey Fletcher, head of the research department, Bell Telephone Laboratories, on "Interesting Data on the Improved Audiometer."

Dr. James B. Herriek addressed a meeting of the woman's board of the Chicago Heart Association, October 20, on "What Women Can Do to Help in a Campaign Against Heart Disease"; Dr. Walter W. Hamburger on "Some of the Fac-

tors in a Comprehensive Cardiac Program," and Dr. Harrold A. Bachmann on "The Child with Heart Disease." Mrs. Morris Woolf is chairman of the woman's board of governors of the Chicago Heart Association; Dr. Herriek is president of the Chicago Heart Association.

Dr. Isaac D. Rawlings, state health director, called a meeting of all health officers in the state at the National Catholic Community House, East St. Louis, October 20. Dr. W. A. Evans, Chicago, Dr. William H. Parke, New York, Surgeons C. C. Pierce and Thomas Parran, Jr., U. S. Public Health Service, and Dr. Jacob C. Krafft, Chicago, president, Illinois State Medical Society, took part in the program.

Dr. Grace S. Wightman, Chicago, has been appointed chief of the division of child hygiene and public nursing of the Illinois Department of Health, to succeed Dr. Edith B. Lowry, who held the position on a temporary appointment. Dr. Lowry did not compete in the civil service examination for a permanent appointment. Dr. Wightman was formerly director of the field department of the Chicago Municipal Tuberculosis Sanitarium.

At the fifth annual meeting of the Tri-County Medical Society, Monmouth, October 1, Dr. David S. Hillis spoke on "The Use of Forceps in Obstetrics"; Dr. John L. Tierney, St. Louis, "Problems in Cardiovascular-Renal Diseases"; Dr. Vernon C. David, Chicago, "Fractures of the Femur in Children," and Dr. J. H. Hutton, Chicago, "Goiter." Among the other speakers were the Hon. John Lugg, mayor of Monmouth, and Dr. Olin West, Secretary and General Manager of the American Medical Association.

Dr. P. J. H. Farrell was elected Surgeon-General of the Military Order of the World War at the annual meeting held in New York September 26, 1925.

Dr. Mary M. S. Johnstone, tuberculosis division of the Veterans' Bureau, has been temporarily transferred to the Bureau in St. Louis, where she has received significant courtesies from the local profession.

Dr. Beulah Cushman has been elected secretary of the Chicago Council of Medical Women in place of Dr. Florence Johnston, who has returned to Cedar Rapids, Iowa, to succeed to her father's medical practice.

News Notes

—The health department of Springfield has arranged to establish a municipal contagious disease hospital, which will be constructed and operated as a unit of St. John's Hospital.

—It is reported that about fifty cases of an obscure ailment and one death occurred in the vicinity of Collinsville and Maryville, and that the cause of the outbreak was attributed to the use of dairy products from cows that had eaten snakerweed.

—Dr. Evarts A. Graham, professor of surgery, Washington University School of Medicine, St. Louis, addressed the Madison County Medical Society at St. Anthony's Infirmary, Alton, October 2, on "The Treatment of Pulmonary Conditions by Surgical Means."

—H. F. Kovski, Athens, a chiropractor, was found guilty of practicing medicine without a license and fined \$100 and cost, October 8. Kovski was recently held to the grand jury on a charge of manslaughter following the death of a child in his office while undergoing "an adjustment," it is reported. No indictment followed.

—The Northwest Branch of the Chicago Medical Society will sponsor a health show at the Logan Square Masonic Temple, 2451 Kedzie Boulevard, December 3-5, which will be endorsed by the Illinois State Medical Society. The physical examinations to be given will include children and adults. Physicians are invited to offer their services as examiners.

—About 10,000 babies were examined physically and mentally at more than seventy baby conferences held at the various fairs this fall under the auspices of the state health department. The predominating defects found were nutritional—rickets, bowlegs, knock-knees, decayed teeth, enlarged heads, flabby muscles and under-size. Each baby was rated on the basis of an examination by specialists.

—It is reported in official correspondence that a so-called University of Trinity College, Chicago, has conferred the degree of Doctor of Medicine on two Japanese gentlemen and that a similar degree was also recently conferred by Lincoln-Jefferson University. Investigations show that although these so-called universities are "legally chartered," they have no buildings and equipment such as all reputable medical schools

possess. The University of Trinity College is not listed in the Chicago telephone directory.

—At the request of the board of directors of Highland Hospital, Belvidere, the Boone County Medical Society became the staff of the new hospital. The president of the medical society, Dr. Alden Alguire, becomes the chief of staff of the hospital; the vice president of the medical society, Dr. Robert B. Andrews, becomes assistant chief of staff; the secretary of the society, Dr. Frank S. Whitman, becomes secretary of the staff of the hospital and every member of the society becomes a member of the hospital staff.

—The Chicago Tuberculosis Institute's annual lectures for nurses began October 21; lectures will be given in various sections of the city until December 16; among the lecturers will be Dr. Daniel P. McMillan, director of child study of the board of education; Dr. Ethan Allen Gray, medical director of the Chicago Fresh Air Hospital; Dr. Hiram H. Bay of the Chicago Tuberculosis Institute; Dr. Max Biesenthal; Dr. John M. Dodson of the American Medical Association; Dr. Walter W. Hamburger; Dr. Harrold A. Bachmann and Dr. John Leonard Manning.

—At the twenty-fifth anniversary dinner of the Chicago Surgical Society, October 2, Hotel Sherman, the speakers were charter members of the society. Dr. Edward Wyllys Andrews' subject was "Albert J. Ochsner—Our Colleague and Friend"; Dr. Weller Van Hook spoke on "The Advance in Surgery in Chicago During the Last Twenty-five Years"; Dr. Lewis L. McArthur, "The Surgical Profession in Chicago in the Last Twenty-five Years," and Dr. Arthur Dean Bevan, "The Teaching of Surgery in Chicago in the Last Twenty-five Years." Among former eminent surgeons of Chicago who were charter members were Drs. Senn, Fenger, Murphy, Ochsner and John E. Owens.

—The staff of the Norwegian-American Hospital has arranged a series of graduate clinics for the winter months, covering the various phases of medical sciences, giving members of its staff and physicians in the vicinity opportunity to secure advanced information. On Monday of each week, regional anatomy is considered by Dr. O. F. Kampmeier; on Tuesday, physical diagnosis by Dr. Maurice Lewison; on Wednesday, internal medicine by Dr. S. R. Slaymaker; on Thursday, a series of urologic clinics in which Drs. B. C. Corbus, V. J. O'Connor, R. B. Herbst and H. C.

Rolnik alternate; Friday evenings are to be devoted to case presentations by members of the staff, and Saturday evenings to pathologic conferences and histories under the direction of Dr. W. G. Gibbs. The program is under the direction of Dr. Harry Noskin.

—The council of the Chicago Medical Society, at a meeting, October 13, adopted a resolution concerning free medical service, a copy of which will be forwarded to all hospitals and social agencies and health departments in the city. The council held that the Chicago Medical Society should take the initiative in defining medical charity and approved free medical service to all persons who receive charity of any other kind or description. The council, however, views with alarm the tendency of hospitals, social agencies and health departments to pauperize the public by giving free service to those who can afford to pay even a part of the usual fee, and concluded that members of the Chicago Medical Society who aid such institutions in pauperizing the public may be brought before the ethical relations committee.

—The Chicago Medical Society has maintained a telephone information bureau for its members for four years. The policy of the bureau to requests from the public has been not to give out names or recommend physicians. The result, says the official bulletin of the society, is that the bureau does not meet its requirements to the public. The question of changing the policy toward telephone requests for physicians was taken up by the council at its last meeting, which decided to appoint a committee of five to draw up a proposal for placing the Telephone Information Bureau at the disposal of the public. The proposal will be reported to the council, November 10, and will then be submitted, corrected or approved, to the branch societies at their December meetings. It will then be submitted with the replies from the branches, back to the committee, which will report it to the council for final disposition at the January meeting.

—The annual meeting of the Medical Women's National Association will be held in Dallas, Texas, April 18 and 19, 1926, in pursuance of the usual custom of holding their meeting one day prior to the annual meeting of the American Medical Association, which will convene at Dallas, April 19 to 23.

Deaths

JOSEPH C. CHAPMAN, Wheeler, Ill.; American Medical College, St. Louis, 1879; president of the State Bank of Commerce; aged 70; died, October 9.

WILLIAM LOWRY COPELAND, Chicago; McGill University Faculty of Medicine, Montreal, Que., Canada, 1872; a Fellow A. M. A.; professor of anatomy, Chicago College of Dental Surgery, 1884-1920, and Chicago College of Medicine and Surgery, 1906-1920; formerly professor and head of the department of anatomy at the College of Physicians and Surgeons; on the staff of the Cook County Hospital, 1892; aged 74; died at the West Side Hospital, September 18, of embolism.

GEORGE L. CROCKER, Maroa, Ill.; Rush Medical College, Chicago, 1897; aged 69; died, October 1, of pneumonia.

JOSEPH W. EDWARDS, Mendota, Ill.; Rush Medical College, Chicago, 1854; Civil War veteran; aged 93; died, September 8.

PETER F. GATES, Chicago; Harvey Medical College, Chicago, 1903; a Fellow A. M. A.; aged 64; died, August 1, of acute dilation of the heart.

LOUIS L. HERTEL, Chicago; Kentucky School of Medicine, Louisville, 1893; aged 62; died, October 10, of carcinoma of the rectum.

WILLIAM A. HUTCHINS, Orangeville, Ill.; Rush Medical College, Chicago, 1885; aged 65; died, September 22.

JAMES THOMAS JENKINS, Carthage, Ill.; Missouri Medical College, St. Louis, 1890; a Fellow A. M. A.; aged 57; died, October 9, following a long illness.

JAMES MINER, Winchester, Ill.; Jefferson Medical College of Philadelphia, 1861; Civil War veteran; aged 90; died, September 18.

RICHARD FYFE, Chicago; Medical Department University of Illinois, Chicago, 1893; member of the Illinois State Medical Society; formerly on the staff of the Home for Crippled Children; aged 55; died, August 3, of pulmonary tuberculosis.

GEORGE WILLIAM REID, Albion, Ill.; Physio-Medical Institute, Cincinnati, 1884; aged 65; died, September 6.

PATRICK H. SWAIM, Ridge Farm, Ill. (licensed, Illinois, 1882); aged 75; died, September 23, of cerebral hemorrhage.

JOHN F. SNYDER, Rockford, Ill.; Rush Medical College, Chicago, 1882; member of the Illinois State Medical Association; aged 65; died, October 6.

G. E. WHITLOCK, Columbus, Ill.; Jefferson Medical College of Philadelphia, 1876; member of the Illinois State Medical Society; past president of the Adams County Medical Society; aged 74; died, September 19, at the Blessing Hospital, Quincy, of chronic nephritis.

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Society proceedings and news items and changes in the mailing list to Dr. Henry G. Ohls, Managing Editor, 7626 Bosworth Avenue, Chicago.

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Editorial

THE ATTEMPT TO ABRIDGE THE USEFULNESS OF THE MEDICAL PROFESSION.

Powerful forces are at work openly or covertly to abridge the functions and usefulness of the medical profession. These forces are nationally organized. Their participation in politics is only one and perhaps the least menacing of their activities. Their assault on the scientific value of modern medicine is undoubtedly the greatest menace with which they confront the American people, because in that are involved both our natural rights and our constitutional guarantees.

No merely local and sporadic preparedness against this organized war on scientific medicine can be effectual. Our defense, we believe, must correspond in scope and vigor to the attack. The first step is to make the profession of the United States aware of the menacing situation. The second is to increase to the utmost the numerical strength of organized medicine to the end that the profession can act as a unit in the task of safeguarding scientific medical progress and protecting the rights of physicians both individually and collectively.

In whatever we do to combat the warfare against science, we must avoid any feeling or appearance of aggression or challenge. We must remain patient, tolerant and charitable. But we owe it to the public no less than to our profession to be conscious of our rights and liberties and to be resolute in our determination to preserve them. A wider and closer union of the doctors and the laity is demanded and justified by the present, and still more in the future, warfare against science and our civil status.

MEMBER OF OUR MEDICAL HISTORY COMMITTEE HONORED.

In Chicago on December 5 at the dedication ceremonies commemorating the two hundred and fifty-second anniversary of the voyaging of Louis

Joliet and Pere Jacques Marquette, the first white men to pass through the Chicago river in September, 1673, Andrew McLaughlin, professor of history at the University of Chicago, while tracing the lives and careers of Father Marquette, Joliet, Rene Robert Cavelier, Sieur de La Salle and Henry de Tonti took time to pay a grand tribute to the historical research, the work of Dr. Lucius H. Zeuch, a member of the committee on History of the Illinois State Medical Society. Dr. Zeuch and Robert Knight, a civil engineer of Chicago, have been engaged for many years in a survey of the route followed by Father Marquette in his trips through Illinois. Dr. Zeuch and Mr. Knight have discovered old maps and information that had escaped the technical eye of some of the shrewdest lawyers and investigators employed by some of the wealthiest corporations in this country. One year ago Dr. Zeuch made a trip to France at his own expense to look over French maps and histories in the hope that possibly in some French records he would be able to discover the name of the physician who attended Father Marquette in Chicago during 1673.

GOVERNMENT INEFFICIENCY BROUGHT TO THE DOOR OF THE MEDICAL PROFESSION.

For upwards of a year the Committee on Medical History of Illinois has been trying to complete the personnel of the respective draft, exemption, appeal boards and similar bodies in the world's war from the State of Illinois. Numerous letters have been sent to the Adjutant General's office of Illinois; to the War Department at Washington to the Surgeon General's office and to others. No record of this important branch of the service can be found at any of the headquarters named. Springfield passes the "buck" to Washington and Washington passes it back to Springfield. Colonel P. J. H. Farrell made one or more trips to Washington in an attempt to procure this valuable information but without success.

To date the committee has received only incomplete data pertaining to the draft board. It is hoped that ultimately data will be procured. When the data is procured finally it will be from

sources entirely outside of Washington and Springfield, both points where accurate information should be at all times. This is another instance of government inefficiency.

DOCTOR ARE YOU DOING YOUR PART? HAVE YOU SUBSCRIBED TO THE LAY EDUCATIONAL FUND?

IF THIS WORK IS TO CONTINUE EVERY PHYSICIAN SHOULD CO-OPERATE TO THE LIMIT
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Since the November issue of THE JOURNAL was published the following Doctors have subscribed to the Lay Educational Fund.

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THE STATUS OF THE WASSERMANN TEST

One surviving trait of primitive peoples is the subconscious and ubiquitous hope for infallibility in mortal judgment and the discovery of magic wands. Men lose with difficulty their faith in oracles.

Upon this psychological weakness germinate and thrive all the cults and isms of charlatanism and quackery. Nor do the best of us ever quite outgrow our penchant for indulgence in "the illusions of hope."

Therein lies the animus of the laboratory worker whose best efforts are often their own undoing. It is the too great expectation that disappoints, rather than the inherent qualities of what results research offers.

Of no discovery in recent years is this more pertinent than of the Wassermann test for syphilis. A species of laboratory absolution of "Go thou and sin no more" was pinned on it at the start as a consequence of man's constant desire to slip out from under the burden of responsibility.

That the Wassermann test nor any other test could attain such protean capacities as men first believed was certain. Gradually from out of the vicissitudes that this procedure has suffered is coming a resolution of its virtues and its vices into a proper amalgam of credence and of disbelief. This proper evaluation of the Wassermann, this establishment of the complement-fixation test in syphilis in a correct relation to the diagnosis and treatment of the disease has come about through the efforts and teachings of the serologists, and the criticisms, comments and experiences of the clinician. After all it is the clinician who handles the every-day examples.

And yet it is also from the clinicians that serologists are only too often exhorted to improve their methods of examinations so "that reports may with safety be accepted at face value."

If ever men were asked to make bricks without straw, here is a current sample of such folly. The complement-fixation test is only a single symptom or phase of syphilis. Of the necessary exhaustive and extensive examination that must frequently embrace many specialized forms of investigation, the Wassermann test is only one single unit. And of this unit the most important and vital feature should be its inter-

pretation. Any other attitude towards the Wassermann is an insistence for infallibility upon the part of the test that should strip the diagnosis for syphilis of all complexities and difficulties other than those attendant upon the collection of a specimen of blood. This in turn would make of the treatment for syphilis merely the attainment of serologic negatives.

Here is indeed a cry for the apotheosis of impossibility. Also it is a lazy man's desire. How can there ever be devised in connection with the diagnosis and treatment of syphilis any method of laboratory procedure that will relieve the practitioner of careful and minute study of each individual case?

That theatrical and omnipotent conception of biologic specificity upon which was founded the original Wassermann test still holds a powerful subconscious sway upon both lay and medical minds.

Naturally enough the first profound and child-like faith in a positive Wassermann as proof of syphilis was followed by a disbelief based upon the multiplicity of conditions capable of giving a false positive reaction. Only within recent times and by the painstaking investigations of many skilled and patient workers is the truth known as to the high degree of relative specificity maintained by the test.

For this praise must be given to refinements of technic, and the consequent addition of delicacy to the test. Even when present in remarkably small amounts, reacting substances may be detected and measured. Reliability of a positive reaction has been increased further and to a very large extent by the modification and refinement of the reagents and manipulative factors of the technic. Though this would seem to show that the face value of positive reports has been brought up to a much higher percentage of dependability, yet infallibility is still far distant. The test alone cannot do all the work for the diagnostician.

To estimate the reliability of a report one must remember that this quality is associated inseparably with an understanding of the reliability and delicacy of the technic by which the report was achieved. Merits of the technic and of methods involved are requisite for the accurate comparison of any two reports. Now a negative report shows simply that at the time of the examination of the specimen there was a failure

to detect in the serum examined any bodies reacting with a syphilitic "antigen." This report applies only to the conditions maintaining at the time of the examination. It is a present affair, holding no brief for conditions that had preceded or that may come. Dependent entirely upon the proper summing up and the individual and collective evaluation of all the circumstances pertinent to the particular case, is the proper evaluation of this report.

Just what is the right explanation of the complement-fixation test in syphilis remains to be made clear. In as far as people have found out about it, this test is the result of an interaction between the tissues and the spirochetæ that invade these tissues. It is plain that the production of reacting bodies, or as these are called collectively "reagin," depends both upon the ability of the tissues to react and upon the activity of the spirochetæ and their effect upon the tissues.

Upon the delicacy of the method in use, and upon the amount in which the reagin is produced depends the detection of this reagin.

These basic principles when considered duly elucidate reasons for occurrence of negative reactions in syphilis. Such reactions are due either to a quiescence of the spirochetæ with the reduction to a minimum of their effects upon the tissues; to a lack of ability to react upon the part of the individual, or to a failure on the part of the individual to produce reagin in the amounts "capable of detection by the method of complement-fixation in use."

It is admitted that negative reactions occur in cases of undoubted syphilis, and also difficult as this is to explain, such negative reactions may be found in patients who exhibit clinical evidence of active lesions, and, too, such negative reports may follow literally on the heels of a previous positive Wassermann reaction.

Both serologist and clinician have these experiences. Possibility of their occurrence is appreciated better by the serologist than by the clinician.

The "face value" of a Wassermann report is that merely of "a single isolated examination." Its par value depends upon interpretation of its readings when correlated with such other findings as are exhibited by each individual case—historical, clinical and laboratory. There must be a serious appreciation always of the funda-

mental need for carefully scrutinizing the individual merits of each case. Nor can there be any lack of understanding of the factors influencing the occurrence and detection of the reaction such as would permit the acceptance of "A Wassermann at face value."

By methods in ordinary use, though syphilis may be absent, still there can be obtained a positive reaction during pregnancy, especially when the cord blood is tested; or in the febrile stage of pneumonia, or in leprosy or in yaws. To this statement exception must be made of the method described by Kolmer. So far as is known now yaws is the only nonluetetic condition that may report positive under Kolmer's quantitative technic.

But even Kolmer's technic is not free from the fault of obtaining negative reactions in the face of existent syphilis. Reduced to a comparative minimum though the fault is in this respect, yet the fault remains and this possibility for error should not be discounted.

SOCIAL WORKERS INCREASE NUMERICALLY, PARADOXICALLY THE NEED FOR SOCIAL WORK HAS DECREASED

ACCORDING TO THE PROFESSIONAL UPLIFTERS THERE ARE TWO THEORIES OF GOVERNMENT; THE STATE SHOULD BE EITHER A "COP" OR A "NURSEMAID"

In the *Chicago Sunday Tribune*, November 15, 1925, an article written by Harper Leech has the following heading: "Poor decrease, social worker ranks larger."

Chicago charities reported that there are only 12,000 families a year to take care of, against an average of 15,000 before the war. The final conclusion is as follows:

"With people helping themselves so well, and with fewer families in need of what usually is thought of as 'social work' one might assume that the number of 'social workers' would be decreasing. But it isn't. Come to hand a report of one such organization—a minor one—with the triumphant announcement that in its seven years' life its budget has climbed from \$4,000 to \$50,000, its paid staff from two to fifteen. It's the same all over and everywhere.

"A glance at the stationery of the organization solves the apparent contradiction of more social

workers with less social work to be done. Teaching and propaganda are very largely the objectives of many social workers.

"What do they teach?"

"Generalities are dangerous—but this one may fit. There are two theories of government. The state should be either a cop or a nursemaid.

"Organized social work is largely devoted to the propagation of the nursemaid theory."

BIBLIOGRAPHY OF ILLINOIS MEDICAL HISTORY.

The committee of medical history prints below a fairly complete list of works consulted to date and works that are in process of investigation for medical data for embodiment in the forthcoming Medical History of Illinois. These works are listed with exact copies of their titles, authors, publishers and dates of publications. The county histories cover a period from the beginning of settlement up until about 1880, some for a slightly longer period. Many collateral works have been consulted as per list published below following the county history mentioned above. There is a dearth of material on some of the counties. The counties on which there is a dearth of material is published below.

Physicians having information other than that mentioned in the following bibliography that relates to medical history in Illinois should send it to the Committee on Medical History, 6244 North Campbell Avenue, Chicago, Ill.

INSUFFICIENT DATA PREVIOUS TO 1850 ON THE FOLLOWING COUNTIES.

Calhoun
Clark
Clinton
Crawford
Cumberland
Ford
Franklin

Hamilton
Marion
Montgomery
Saline
Stephenson
Washington

INSUFFICIENT DATA SINCE 1850

Cass
Clark
Coles
Crawford
DeKalb
DuPage
Edwards
Grundy
Jersey
Lee
Madison

Marion
Montgomery
Pike
Pope
Putnam
Randolph
Shelby
Stark
St. Clair
Stephenson
Tazewell

FAIRLY COMPLETE DATA ON THE FOLLOWING.

Adams
Alexander
Bond
Boone
Brown
Carroll
Champaign
Christian
Clay

DeWitt
Douglas
Effingham
Fayette
Fulton
Gallatin
Greene
Hancock
Hardin

Henderson
Henry
Iroquois
Jackson
Jasper
Jefferson
Jo Daviess
Johnson
Kane
Kankakee
Kendall
Knox
Lake
LaSalle
Lawrence
Livingston
Logan
Macon
Macoupin
Marshall
Mason
Massac
McDonough
McHenry
McLean
Menard

Mercer
Monroe
Morgan
Moultrie
Ogle
Peoria
Perry
Piatt
Pulaski
Richland
Rock Island
Saline
Schuyler
Scott
Union
Vermillion
Wabash
Warren
Washington
Wayne
White
Whiteside
Will
Williamson
Winnebago
Woodford

Quincy and Adams County history and representative men. David F. Wilcox, ed. Chicago and New York, The Lewis publishing company, 1919.

The genesis of Adams county, by William D. Barge.

The history of Adams County, Illinois. Chicago, Murray, Williamson and Phelps, 1879.

The genesis of Alexander County, by William D. Barge.

History of Alexander, Union and Pulaski counties, Illinois. Ed. by William Henry Perrin. Chicago, O. L. Baskin & Co., historical publishers, 1883.

Official book of the Fort Armstrong Centennial Celebration, 1816-1916.

Historical Register of Officers in the Continental Army, 1775-1783.

Historical Register and Directory of the United States Army Surgeons, by Heitman. v. 1. (The articles we wish to get are those on Surgeons and Forts in Vol. 2. This volume cannot be found at the Chicago libraries.)

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The Brown County ossuary (in Illinois State Historical Society Journal, 1908, v. 1, p. 33-43), by Snyder, J. F.

The genesis of Brown County, by Wm. D. Barge.

Map of Bureau County with sketches of its early settlement. Chicago, Tribune company, 1867.

Beautiful Bureau. A collection of photographic reproductions of the picturesque, historical or otherwise interesting scenes of Bureau County, Illinois, by C. W. Skilling and C. H. Masters. Princeton, Illinois, 1894.

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County seat battles of Cass County, Illinois (in Illinois state historical society Journal, 1914, v. 7. p. 166-194).

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The genesis of Champaign County by Wm. D. Barge.

A history of the early settlement of Champaign County, Ill., by J. O. Cunningham. Urbana, Illinois, 1876. Pub. in the Champaign County Herald.

History of Champaign County, Illinois. Philadelphia, Brink, McDonough & Co., 1878.

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METHUSELAH

Methuselah ate what he found on his plate

And never, as people do now,

Did he note the amount of the caloric count—

He ate it because it was chow.

He wasn't disturbed as at dinner he sat

Destroying a roast or a pie,

To think it was lacking in granular fat

Or a couple of vitamins shy.

He cheerfully chewed every species of food,

Untroubled by worries or fears

Lest his health might be hurt by some fancy
dessert—

And he lived over nine hundred years!

—*Jour. Fla. Med. Assoc.*

Correspondence

PROF. DANIELS NOT ON FACULTY

Chicago, Nov. 25, 1925.

To the Editor: My attention to the editorial in the November issue of your paper entitled "Abolishment of Home and Transfer to State of Child Rearing Advocated by Woman Psychologist at University of Chicago." The article is based on an editorial in the Detroit Free Press of June 8, 1925, quoting freely from it. In the course of your article is the following:

"Do the sponsors of the University of Chicago as individuals and as citizens of the United States subscribe to Professor Daniels' doctrines? Or have they any idea what she talks about any more than she has herself?"

Please allow me as an official of the University of Chicago whose business is directly connected with the records, to say that the implications of both editorials are quite misleading. Both are so worded as to give the impression that Dr. Daniels is a professor in the University of Chicago. This is not the case. Miss Daniels is not a member of the faculty of the University and never has been. She has done no teaching in this institution. Professor James H. Tufts, Dean of the Faculties, wrote last summer to the Detroit Free Press and stated this fact. She did indeed take both her college course and her graduate course here, but she has had no connection with the University since she received her degree of Ph.D. in 1918. She did not "journey from the University of Chicago" to give the address which she is said to have delivered in Detroit.

For whatever views Dr. Daniels may have given utterance to on the occasion to which reference is made, she alone is responsible. Please give this article the same degree of publicity as was given to the article in your November issue. I remain,

Yours respectfully,

FREDERIC J. GURNEY,

Assistant Recorder.

The University of Chicago,

Office of the Recorder.

Now that they have invented a way to make people tell the truth by injecting a serum into them, the anti-vaccination movement ought to get several million recruits.—*Bridgeport Telegram.*

A NATIONAL HOME FOR AGED, INDIGENT OR DECREPIT PHYSICIANS.
THIS IS THE FIRST MOVEMENT
OF ITS KIND IN AMERICA

WE HOPE THE MEDICAL PROFESSION WILL ANSWER THE CALL AND WILL SEND GENEROUS CONTRIBUTIONS TO THE NATIONAL
TREASURER

New York, Nov. 27, 1925.

To the Editor:

Enclosed is report of the event staged here in opening the national campaign for the Physicians' Home. The event was an outstanding success, exemplifying the unified spirit of helpful active cooperation to be expected throughout this campaign.

We sincerely hope that you will devote your columns to its publication. May we ask also that you forward to us a copy of the issue in which it appears?

Thanking you in advance, we are

Yours very truly,

THE PHYSICIANS' HOME, INC.,
Charles Capehart, Campaign Director.
Times Bldg.

The following is the report:

The campaign to establish an endowment fund for The Physicians' Home, the first small unit of which is already in service at Canadea, N. Y., was launched Monday, November 23, at the Waldorf-Astoria, New York. An impressive gathering that included men and women prominent in medicine, financial and other fields heard noted speakers outline the purposes of the campaign and laud the movement. A number of substantial donations were received, indicating the interest of the profession and the public.

Excerpts from the addresses of speakers follow:

United States Senator Royal S. Copeland, M.D.:

"I hope and trust that there are people enough in this country who appreciate the sacrifices made by the medical profession so that there can be abundant money raised to build a home big enough to take care of all the doctors who need it. I do believe there is that in the heart of the people who have been served by the medical profession to make them glad to furnish the money to build and equip this home."

Congressman John J. Kindred, M.D.:

"From every sentimental standpoint, from

every humanitarian standpoint, from every practical and economic standpoint, there can be but one conclusion as to the urgent necessity for a national physicians' home. Of course, it must not be left out of the consideration that this home, in order to be a real credit and a blessing to physicians and to our nation, will require a vast deal of money. I am very sure that this great humanitarian plan shall not fall through because of lack of plenty of money."

Samuel Untermyer:

"Above and beyond all professions and occupations, and quite in a class by itself, stands the physician's as the emblem and personification of a life dedicated to public service in its highest sense. In that respect the ethics and practices of your great profession are unique. From the obscure, patient, overworked country doctor, who toils at all hours by day and night relieving suffering and ministering alike to the poor and the rich, to the men who have climbed to the top and have attained national and international fame, 'service' has been the key-note of their lives. It is no exaggeration to say that fully one-half of their professional lives are devoted to public and charity work. Every hospital is equipped with a staff of eminent specialists whose time thus freely contributed could not be had for money. To your everlasting credit be it said that no man can attain the highest professional eminence who does not participate in this service.

"I believe that there will be a quick and generous response to this appeal. To think otherwise would be to lose one's faith in the sense of justice of our people.

"I wish you every success and pledge you my fullest support."

Rabbi Israel Goldstein, representing the N. Y. Board of Jewish Ministry:

"The physician, most of all, is society's creditor. Mankind will never be able to pay its debt to its physicians and that debt is owing to the humblest among them, because from the bottom to the top, or rather from the top to the bottom, the physician is a servant of God and a servant of man; the physician is the hero and the martyr, whose martyrdom is little heeded, because it is so usual, and therefore I feel confident, men and women, that this project will earn the support of men and women from all walks of life, for anyone to whom the name of physician means service cannot refrain from holding up

your hands, Mr. Chairman, in this noble work you are launching tonight. That the medical profession itself will support it, is beyond question, first, because the strength of a profession is measured by its organized solicitude for its weakest members, and surely the medical profession will not be adjudged anaemic, and secondly, because benevolence towards the weaker colleague is to be expected of the physician most of all. In the course of his daily duty, he sees it every day. To the layman, in the full robustness of health and prosperity, it may be necessary to make an appeal to the imagination, and draw before his mental eyes pictures of need, but he, too, will respond."

Dr. Walter P. Bowers, Editor, Boston Medical and Surgical Journal:

"I want to extend to you as far as I am able the spirit of co-operation which I am sure exists in Massachusetts, and how far you may be able to go in co-operation with this organization which already exists, I am unable to say, but it seems to me very proper—and I hope it can be brought about—that our State organization may in some way co-operate with you, even if it does not become absorbed in your larger plan."

Dr. Robert T. Morris, President of the Home:

"None of the doctors are to be subjected to institutional methods. They will be free to come and go as they please. Those who have nothing will pay nothing. Those who can afford to pay for part or all of their care (and there are many such) will be allowed to do that.

"The Directors of The Physicians' Home are all busy men actively engaged in professional work and receiving no compensation for their time and labor, willingly expended in this charity, the need for which has been brought so strongly to their attention. They feel that it is time, in the larger development of the institution, to secure an endowment which will allow them to transfer the responsibilities to men who are trained in social service relating to institutions."

Dr. William H. Dieffenbach:

"It was my privilege, some three or four years ago, to become interested in The Physicians' Home, and I became very deeply interested, owing to the fact that a woman physician whom I had known for a number of years, who had devoted over 45 years of her existence in taking care of the public, serving in the clinics,

and in teaching others as a volunteer, had reached a stage in life and in circumstances that prevented and precluded any further activities. She called at my office and this concrete example I think will bear the whole project home to every one of you and bring it right to a focus so that every one of you will understand the importance of this.

"She said, 'Doctor, I have just one thousand dollars. I am 71 years of age. All the rest of my family have died. I do not wish to go into a poorhouse. What shall I do?' I had received the literature of The Physicians' Home a year before, and had subscribed in a small way, and I had their literature before me at that time. I told the lady that I would see if I could get her into this home that we were speaking of. Without the slightest difficulty, Dr. Morris and his colleagues admitted this lady, a lady of very high culture. I myself accompanied her to the Home. She received a welcome there. She inscribed her name in the book as a guest, just as she would at a hotel. She received a private room, with things that the ladies like, plenty of closet room, and she was at home. She was in a very bad, nervous condition. She was in a state of health that foreboded the worst. The air, the splendid country around Caneadea, built her up, and after six months of gratuitous board at that place she was able to find, amongst some distant friends, another home to which she afterwards went. It meant the saving of life of this very fine, cultured woman."

Don C. Seitz, of the New York World:

"It is a curious thing about humanity. Away down at heart, it thinks that the doctor, the clergyman and the editor ought to work for nothing and board himself. I know from experience, because my father was all three. He began life as a doctor, passed many years as a clergyman, and wound up as an editor, and had the opportunity to experience this feeling in each of these capacities. Why it should be so I do not know, but I know that it is true, and I know that we do not half appreciate the sacrifices of the three professions in this great and noble land. I hope some effort will be made to extend this movement outside of the profession. I know what it means, and I know one thing that you ought to do: You ought to stretch this movement out. Don't put too much on your own shoulders. Remind the public that this need is their need."

Campaign headquarters have been established in the Times Building, Times Square, New York. Contributions should be forwarded to that address, in care of the treasurer, Albert G. Weed, M.D. Other officers and directors are Robert T. Morris, M.D., President; William H. Dieffenbach, M.D., Vice-President; Silas F. Hallock, M.D., Secretary; and Drs. Warren Coleman, Max Einhorn, Wolff Freudenthal, J. Richard Kevin, Stephen V. Mountain and Ralph Waldo.

It was disclosed at the inaugural banquet that of the more than 140,000 physicians in the United States approximately 5 per cent are incapacitated. It is these the Home seeks to serve.

IS PLURIGLANDULAR THERAPY AN ADVANCE OVER SINGLE GLAND EXTRACTS?

Glendale, Cal., Nov. 17, 1925.

To the Editor: Relative to our discussion of the merits of pluriglandular therapy I enclose you the following data for your information. So far as I know, there has never been a paper of this type published before. All the statements which I am taking to task have appeared within the last three or four months.

A significant trend in present-day literature on therapeutics is, I believe, worthy of some comment as it concerns an important question of professional obligation. It may be crystallized in the the alternative questions:

Does the main objective of the conscientious physician consist in the control or cure of his patients' ailments? Or is it his chief aim to add to his information and with the idea of increasing general knowledge and qualifying himself the more?

Without further ado, I will set down here two quotations appearing recently in the *Journal A. M. A.*

A professor of physiology writes: ". . . if we try a whole series of therapeutics simultaneously, we can draw no reliable conclusions as to the specific effects of the organotherapy in question." The Editor, in commenting on the article in question, characterizes it as "conservative, sane advice," adding that such opinions are likely to "pilot us through the dense fog of pseudoscientific writing."

Two otorhinologists state: ". . . the use of two ingredients or of two measures at one time violates the principle that we consider essential in arriving at a scientific basis for treatment, namely, to use at one time only one therapeutic measure in order to see

whether beneficial results are had or not"³ However, the authors betray a tendency to treat the patient as a whole when they say: "Our own clinical results were not of much value, since we also committed the error of using both, local and general measures at the same time, or using more than one measure, whether local or general, at one time; and therefore we did not know to which one to ascribe good results"

It is very evident that these writers are nurturing a state of mind that is opposed to sound practice* and, for in so far as the employment of combined measures is concerned, for the alleviation of symptoms and the removal of diseases causes, I am glad to have had incidentally, to a position which I have long taken, something to do with the establishment of pluriglandular therapy as a decided advance over the use of single-gland extracts in the common endocrine irregularities, which *always* involve more than the most obviously affected gland.

It is a principle well known in other phases of human endeavor that, to supplement one factor with another, sometimes brings about a marked increase in the value of the two individual things. For example, the work accomplished by a team of horses is much more satisfactory than that of two single horses. Also, dynamite alone has little active power until there is a factor introduced which sets it off. In other words, the comparatively insignificant effect of the fulminate in the cap makes all the difference in the world to the explosiveness of the adjoining substance.

The primary question before the practitioner is not so much concerned with the theoretical aspects of a case of illness as with the best means for relieving the patient of his distress and for restoring him to health. Experience has shown that certain therapeutic measures are successful under certain conditions, and without our knowing why and how. To refrain from using them on the plea of empiricism would be worse than quackery. It would be a scientific pose. The scientific poseur, he of the supercilious, snobbish exclusiveness, is deserving of criticism, not the one who honestly attempts to bring science down to earth, to make it practical and of actual service to mankind; which is its mission.

I do not believe (and I feel confident that very few broad-minded physicians, including the clinical writers from whom I have quoted, will disagree) that one should actually limit therapeutic procedures to single measures, because it is our chief business to advise and treat patients and thus help them to attain as quickly, as thoroughly, and as conveniently as possible that for which we are consulted. The professor's chief concern is apparently to be able "to draw reliable conclusions" irrespective of what happens to the objects of his experimentation. It is clear that he is not a practicing physician! The *practical* deductions to be drawn from his observations, their application in the

*Since writing this article, and in justice to these authors, I should say that, in conversation, they impressed upon me the fact that their criticism and their whole attitude was based upon the development of information regarding the theory of hyperesthetic rhinitis and not the attainment of success in its treatment; which, of course, makes a difference.

problems of medicine do not interest him. Science is his fetish; practice is negligible.

Fortunately, it is the physiologist's business only to study physiological processes, in health and in disease, and thereby to explain, if possible, observations made in clinical cases. He may act as an advisor. But it is beyond his province to dictate to the practitioner of medicine. Therefore, strictures made by a professor of physiology regarding therapeutic practices that he can not duplicate in the animal experiment are gratuitous and outside of his province.

The paramount importance of the organism as a whole and the coordinate functioning of all its parts for the common good are fully realized by thinking specialists. No specialist in nose and throat practice, for instance, is doing the fair thing to his patients *if he ignores coincidental irregularities*. In other words, what may be very necessary for the immediate treatment of a nasal disorder must be supplemented with a remedy, or a series of remedies, calculated to modify fundamental conditions, such as toxemia, constipation, alimentary stress and so forth. Every physician knows perfectly well that, no matter what dominant therapeutic procedure may be needed, to it should be added other therapeutic measures to meet associated indications. This, indeed, is the customary procedure, and there still are many practitioners of medicine who treat their patients rather than their diseases.

After all is said and done, combined drug treatment is not a rare thing. Polypharmaceutical therapy is the custom approved by clinical experience and the number of drug mixtures that are given as alteratives, as analgesics, as cathartics, and so on, is large. I am convinced that those who deny to their patients the advantage which comes from using several needed remedies given simultaneously are not merely unscientific, but they are unfair to their patients.

Take as an example one of the procedures that have been criticized on theoretical grounds, the simultaneous use of calcium and parathyroid substance. If it is true that parathyroid is a remedy which modifies irregularities in the calcium metabolism and helps to fix needed lime in the tissues, and if it is true, simultaneously, that lime is deficient in certain cases that are benefited by parathyroid therapy, obviously the thing to do is to *combine the two*!

A most interesting development in organotherapy and polypharmacy is outlined in a recent paper by a Liverpool physician in the *British Medical Journal*,⁴ and I might say that this article, which is supplemented by a number of clinical case reports, is rendered more important by an editorial pronouncement in the same issue of this periodical.⁵ Manganese is a remedy which apparently enhances the efficacy of thyroid extract and is simultaneously valuable in many of the conditions for which thyroid customarily is given. If these experiences are confirmed and if the opinions of the editor of the *British Medical Journal* are sound, then it is of advantage to give thyroid and manganese together rather than the one or the other alone—some-

thing quite contrary to the views of the scientist whom I quoted at the outset of this article.

There is no doubt that the fundamental principle known as catalysis, to which I have called attention in other articles, is at the bottom of the advantages which accrue from combining cooperative remedies and especially endocrine substances. Some of these substances exert a catalytic effect upon substances in the endocrine organs that it is desired to modify, while it is equally true that some of them, when combined, exert a catalytic effect upon one another. The combination of two or more endocrine substances, equally needed in a given case, not merely accomplishes twice as much as one alone, but sometimes ten times as much for a given patient.

The failure to administer a remedy that is needed, in conjunction with another remedy that is known to be important, may make all the difference between success and failure in the control of problems of this kind. This is true especially in the employment of biological remedies which may in fact be designated as physiological.

In looking up some matters pertaining to pituitary headache, my attention was called to a rather amusing report in the chapter by Engelbach and Tierney in Tice's "Practice of Medicine."⁶ Briefly, they report a case of a lady physician, aged 31, who was suffering from several conditions believed to be of endocrine origin. She was considerably overweight, had severe headaches and suffered from menstrual disorder. She was given simple thyroid therapy for the first three months of her treatment. This had a beneficial influence upon one feature of her difficulty—she lost nearly twenty pounds in weight. Her headaches occurred less frequently and were not so extremely painful. The dysmenorrhea was not affected. Evidently she developed some symptoms of thyroidism, due to the medication; in consequence of which, the treatment was interrupted for several days. Later on, corpus luteum was added to the thyroid treatment for two months, but there was no further improvement in the condition. Then anterior-lobe pituitary was added to the thyroid treatment and the corpus luteum. Soon after this combined treatment was started, the patient began to note marked changes towards improvement. "After a month's treatment of this kind," proceed the authors, "the patient had the first painless period in her menstrual life. The headaches, nausea, vomiting, nervous disturbances, mental confusion and irritability have disappeared entirely." This pluriglandular treatment was continued for some time, and there has been, as these authors say, "remarkable freedom from symptoms and signs present previous to its administration."

This not merely emphasizes the importance of pituitary therapy in pituitary irregularities and especially in what is believed to be pituitary headache, but it shows in a most conclusive fashion the greater value of pluriglandular therapy. Here is a patient—herself a physician—who takes thyroid therapy for months with certain undubitable but limited benefit. Ovarian therapy is added with little or no benefit,

but as soon as the combination of the thyroid, ovary, and pituitary has been given for one month, the patient has the first painless period in her menstrual life. The headaches, nausea, vomiting, etc. . . . have disappeared entirely. To my mind, a very decided indication that pluriglandular therapy has positive advantages over single-gland therapy.

In conclusion, let me emphasize that the physician who chooses to use single remedies, when it is obvious that several are needed, is going to fail in his service, because he is sure to prolong the discomfort of his patients and increase the cost of their treatment. Even though, in so doing, he may increase his knowledge, he has done so at his patients' expense in pain, time, and money.

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HENRY R. HARROWER.

A FINE SPIRIT OF COOPERATION

Edwardsville, Ill., November 18, 1925.

Dr. Lucius H. Zeuch,
Chicago, Ill.

My Dear Doctor: Replying to yours of yesterday will say that it would be quite a large undertaking and an expensive one to copy the biographies of the men mentioned in my article in the Centennial History of Madison County.

However, I am sending you, by parcel post, the original working notes from which these biographies were written. They are practically in the same form as they appear in the publication and out of the mass that I send you (something like seventy odd biographies) you may find something that will be of value to you in the preparation of your history.

Will you kindly return these notes to me when you are entirely through with them as I would like to preserve them for future use. The twelve pages that precede the biographies outlined a general medical history and gave my impressions of these old time doctors, also recounting the process by which men were admitted to the practice in olden times, but of course all of this you can secure from other sources.

I know of no record of the physicians or surgeons that were with Captain Ramsey, at old Fort Russell, during the War of 1812, but I have

referred this matter to the officers of our County Historical Society and through them will try to get this information.

If there is anything else by which I might be able to assist you I will certainly do so if you will let me know.

With my best wishes for your success, I remain

Yours truly,

E. W. FIEGENBAUM,
Secretary, Madison Co. Med. Soc.

Edwardsville, Ill., December 1, 1925.

Dr. Lucius H. Zeuch,
Chicago, Ill.

My Dear Doctor: Replying to your letter received this morning will say that the article to which you refer appears in Volume 1 of the "Centennial History of Madison County," published by the Lewis Publishing Company of Chicago and New York in 1912.

The title of the article is "Medical Practice and Practitioners" and extends from page 371 to page 411.

I have just been informed that a copy of the two volumes of the above history may be found in the historical department of the Public Library on Michigan avenue, Chicago, also at the Newberry Library on the North Side. You may also find a copy at the offices of the Lewis Publishing Company, 180 North Market street.

I believe that I am on the track of the Thompsonian Certificate issued to Mr. Joseph Chapman and if I find it I will have a photograph made of it and send this photograph to you so that it may be used as you see fit. There are still two or three survivors of the old Chapman family living here and I believe that by looking over the father's old papers this particular certificate will be found. I know I had it when I copied the certificate in my article.

I have not been able, as yet, to find any information as to the medical officers that were with Captain Ramsey at Camp Russell during the War of 1812. However, I have not given up and I am still hunting for this information.

If there is anything I can do to help you further I am perfectly willing to do so.

With my kindest regards to Dr. Whalen and yourself, I remain

Yours truly,

E. W. FIEGENBAUM.

Original Articles

MODERN AIDS TO LABOR*

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TORONTO, CANADA

In discussing the subject of gestation teachers throughout the world are accustomed to consider the pregnant state as a normal physiological condition, and practitioners generally have at all times been in the habit of telling the expectant mother that hers is a perfectly normal case and that everything will be all right. Reproduction is of course a physiological function, but some obstetricians in their pessimistic moments are tempted to look upon pregnancy as a disease, pandemic in its distribution, running a self-lined course of varying degrees of severity, and terminating at the end of nine months by crisis.

During the past year a series of observations made in the metabolic ward of the Burnside Lying-in Hospital might with some stretch of the imagination tend to lend a slight degree of support to the latter view. Harding and Van Wyck made a chemical analysis of the blood of a number of healthy pregnant women, carrying their observations through from the earliest months of pregnancy up to term, during labor and through the puerperium, and found that without exception there was a slight but gradual increase in the accumulation of the waste products in the blood from conception to the termination of labor, with a sudden return to normal during the puerperium. These observations go to show that pregnancy and labor while being normal physiological processes cause an interference with the metabolic process which at term and during labor may at times approach the point of impairment of the kidney function.

While the vast majority of expectant mothers have not until recently paid much attention to the pitfalls and dangers which may be met with during the course of pregnancy, they have long been alive to the real and imminent danger of labor, and while they may not have seen fit to consult a doctor earlier in the pregnancy, they have not failed to recognize the necessity of his presence at the crisis.

Of late years, however, the value of pre-natal care has been proven time and again. Not only has it made clear that the toxemias of pregnancy are to a great extent preventable, but it has also given to the observant attendant a knowledge of the size of the pelvis and of the nature of the labor to be expected, besides forewarning him of such difficulties and dangers as may arise. For these reasons we must consider pre-natal care our most valuable aid to labor.

Labor itself is rarely painless. In twenty years of practice I have had only two such cases, and the experience of other practitioners is similar to mine. From the beginning of time the parturient has undergone varying degrees of suffering from slight discomfort to extreme torture, and humane consideration has demanded for her a degree of relief which is consistent with safety to herself and without danger to the child. Many devices have been employed to secure this relief, some by lessening pain, others by shortening labor, and in this paper I propose to make a few observations on the results of my own experience with some of the methods advocated by different enthusiasts.

The introduction of chloroform and ether into obstetric practice was of inestimable value and these anesthetics have stood the test of time. They have their disadvantages, however, owing to the fact that while they relieve pain they also diminish contractions, prolong labor, prepare the way for post-partum hemorrhage, and are not without danger to the child when used for any length of time. Consequently of late years obstetricians have been looking around for some safer means of relieving pain, and with the introduction of nitrous-oxide as an efficient anesthetic they thought that they had reached the ideal. This combination, administered during contractions, relieves their pain without diminishing their strength and can be carried on almost indefinitely, but the expense of the gas itself together with the cumbersome apparatus, and the necessity for a trained anesthetist to administer it, put it beyond the reach of all but hospital patients.

The discovery of the amnesic effect of morphin-hyoscine narcosis appeared to solve the difficulty and for a time the so-called "Twilight Sleep" was universally tried. In 1905 we experimented with this method at the Burnside Lying-in Hospital for a period of two months,

*Read before the Inter-State Post Graduate Assembly of America, Milwaukee, Wis., Oct. 27-31, 1924.

but a series of blue babies in rapid succession led us to discard it as a routine treatment and we did not take it up again until 1920, when it was used with success in 45 cases. In this series all the babies cried lustily at birth. The labor was in no case prolonged and the amnesia was complete in every case but one. It is, however, quite true that in each of these cases a small amount of C & E mixture was administered during the perineal stage.

The lesson learned from the poor results in 1905 was that the depressant action of the morphine on the respiratory centre of the fetus made the administration of the drug inadvisable in the second stage, as its effect had not worn off by the time this stage was complete, and resulted in the birth of an asphyxiated child. Accordingly it is our custom now, when this method of treatment is advisable, to give only an initial dose of morphine, grs. 1/6, which is administered in the first stage accompanied by 1/200 gr. of hyoscine, the hyoscine to be repeated as necessary in order to maintain the required degree of amnesia. Here again this method has its disadvantages. It requires the attention of a specially trained nurse, or the presence of the doctor for its administration, as well as suitable surroundings and the co-operation of the family. The room must be darkened, isolated, and quiet, while the family must be informed as to the possible effects of the hyoscine on the patient, as in many instances while the effect of amnesia may be produced there may be a lack of control of the emotions on the part of the patient who may appear to be suffering more than ever during pains. It is hardly, therefore, a suitable method for use in the home, although it is of value at times, particularly with a moderate degree of pelvic contraction, during prolonged first stage, due to a slowly dilated cervix or with a very nervous patient.

Another method of anesthesia lately introduced by Gwathmey and his associates is that of the administration of ether by rectum. His method is to give a hypodermic injection of 1/6 grs. morphine, dissolved in 2 ccs. of 50 per cent. solution of chemically pure magnesium sulphate at a time when the pains are coming every three or four minutes, the cervix is being taken up and the os dilated two or three fingers. This is followed in 15 minutes by the injection, by means of a syringe on the end of a medium sized

rubber catheter of a mixture of 10 grs. quinine hydrobromide, 2 drams of alcohol, and 2½ ounces of ether in enough olive oil to make four ounces. Care must be taken to have the lower bowel thoroughly cleansed by enemas before the instillation is made and the whole amount should take from 5 to 10 minutes to inject, pressure being made on the perineum during pains. The effect of this treatment is to cause the patient to become drowsy within three or four minutes and to continue so for three or four hours. If after that time she becomes restless a hypodermic of 2 ccs. of 50 per cent. solution of chemically pure magnesium sulphate is given and may be repeated a second time if necessary. The optimism of Gwathmey led me to try his method as outlined in his first report, in 42 cases at the Burnside. In 40 of these the recollection of the labor was indistinct and its length apparently shortened, while in two the results were entirely unsatisfactory. There were nausea and vomiting in 30 cases, and in 22 cases inhalations of C & E were required toward the end of the second stage. In this series, 2 of the babies were still-born and the method must take the responsibility of this unfortunate result. Here again while the method of administration was simple the patient required extra attention on the part of the obstetrician and the nurse. In more than half the cases there were nausea and vomiting and the method was not without danger to the child. It is a method, however, which is of value in prolonged labor, in the latter part of the first stage, and it produces analgesia and an amnesia which generally lasts through the stage of nausea and vomiting.

Another aid to labor, which appears to have more advantages and fewer disadvantages than the other narcotics used in obstetrics is heroin. It is now being used in the Burnside with uniformly satisfactory results, although the administration of C. & E. is necessary during the perineal stage. It may be given at any time during the first stage in 1/12 gr. doses and may be repeated as often as is necessary to control the pain. It does not seem to have any effect on the strength of the contractions. Labor is not prolonged and the mother is not exhausted at its termination, while it appears to have no ill effects on the child, although in two cases reported to me the fetal heart rate was slowed to 60 beats per minute after its administration

and in each of these cases artificial means were necessary to restore the baby. In one other case when the drug was administered during the latter part of the second stage an asphyxiated baby was born, which required half an hour to resuscitate.

Spinal anesthesia is another method which has been used advantageously, particularly in the West. My own experience, however, with the use of stovaine in abdominal surgery was so disappointing, in that it had to be supplemented by a general anesthetic, that I have not yet felt justified in using it in obstetrics. Nor have I lost sight of the fact that the late Sir Victor Horsley when collecting statistics on the Continent concerning the use of spinal anesthesia met with several instances of neuromata in the spinal cord following its administration.

So far I have considered only certain aids to labor which deal with the relief of pain. Besides these there are medicinal, mechanical, and surgical methods which are used for the purpose of shortening labor.

Of medicinal aids, pituitrin is one of the most impressive drugs which have come into use during the last 15 years. It has been both praised and condemned in high places. In my experience, however, it has proved most valuable. But there are certain facts about it which it is well to remember. First of all, we know that it causes intermittent contractions of smooth muscle fibres. We know too that patients react differently to its administration, and we also know that different preparations have varying degrees of potency. It is advisable, therefore, to take the precaution of ascertaining the susceptibility of the patient to its action by administering the minimum dose before using the larger dose required to produce the desired result. It is also absolutely necessary to make sure that there is no obstruction in the canal which will counteract the effect of the increased pressure from above, produced by the action of the pituitrin, otherwise the results will be dangerous in the extreme.

I have used the drug in more than 300 cases, chiefly in multiparae, but only in the normal cases where the cervix has been dilated or is dilatable, when the head is in mid-pelvis and where there has been no rigidity of the perineum. In 10 cases I perceived no effects, in the remainder the average length of time from the administration of the drug to the completion of the second stage was 20 minutes. There were

two cases of tonic uterine contraction readily controlled by the administration of an anesthetic, which should be kept always ready at hand, and two cases where there was a moderate post-partum hemorrhage easily controlled. Two of the babies showed asphyxia, but cried lustily within 20 minutes. There was no fetal or maternal death in the series. I have come to the conclusion that pituitrin is one of our most valuable means of shortening the second stage without mechanical interference, but it requires the exercise of as much care and obstetrical judgment in its administration as any other method now in use. For instance, one must determine that there is no disproportion between the maternal pelvis and the fetal head. One must know the lie and attitude of the child, and one must be sure that the passages are clear of obstruction, and that there is no rigidity of the cervix or perineum. One must also determine beforehand the strength of the preparation to be used and the susceptibility of the patient to its action.

So far as I have been able to determine from the reports of the tragedies following the use of pituitrin, some one of the precautions outlined has been neglected, or there have been other factors which should share the responsibility with this much maligned drug.

Of the mechanical aids probably the one most widely discussed is that of version. Two or three years ago Potter startled the medical world by claiming that the ideal method of eliminating the suffering during the second stage was by converting a vertex presentation into a breech, and delivering as such according to a technique which he has developed to the highest degree of perfection. Oddly enough, however, he did not use this technique in the ordinary breech presentation but resorted to Cesarean section in such cases. The results obtained, however, as far as the fetal mortality was concerned, were not as good as those obtained from the conservative treatment of a similar number of cases reported by Polak.

When such a method conceived and carried out by a master of his art fails to produce favorable results as far as the fetus is concerned, it should be condemned as of no value to the general practitioner. The technique of version, however, described and employed by Potter is well worth consideration by every practitioner,

and might be followed with advantage wherever this procedure is indicated.

DeLee, actuated by a desire to eliminate the suffering of the second stage, has advocated a prophylactic episiotomy and mid-forceps operation which, while it does what it is intended to do, converts what should be a physiological process without mechanical interference into a surgical procedure with all its accompanying dangers and should not be attempted outside of a hospital. It is of considerable value, however, in certain emotional types which cannot be controlled by narcosis. Episiotomy alone I have found of value, particularly when the head is delayed too long on the perineum, in elderly primiparae with a rigid perineum and when a tear is inevitable.

In this brief outline of aids to normal labor I have considered only a few of the methods advocated by men of experience, who have been actuated by a desire either to relieve or cut short the suffering of the parturient. No one of the methods is perfect but each of them has something in it which is of value to the general practitioner. After all there are three requisites for success in obstetric practice. In the first place the obstetrician must have a conscience. Remembering the narrow pathway along which his patient is traveling on the borderland between health and disease, he must take every precaution to secure her safety, so that in the event of a tragedy he will not be compelled to bear the burden of self-reproach. Secondly, he must possess infinite patience and tact enough to avoid being driven into hasty action through the importunities of the patient or her family. And lastly, he must possess sound obstetric judgment. The old dictum, "Beware of meddling mid-wifery," is sound and sane advice, but with watchful waiting the careful observer will at times find that intelligent interference is not only advisable but life saving.

The evening lesson was from the Book of Job and the minister had just read, "Yea the light of the wicked shall be put out," when immediately the church was in total darkness.

"Brethren," said the minister with scarcely a moment's pause, "in view of the sudden and startling fulfillment of this prophecy, we will spend a few minutes in silent prayer for the electric lighting company."

SYMPOSIUM ON GOITER FROM THE VIEWPOINT OF THE SURGEON*

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Discussions by the laity, the profession and the daily press are bringing the subject of the proper management of thyroid disease prominently before the public. Is the proper treatment, medical, surgical, x-ray or radium, or practically no treatment except the removal of any foci or infection, especially in the nose, throat or oral cavity and attention to the general health of the patient? Good results are claimed by advocates of all these measures, and the clinician must be in a position to determine what method he is to follow in a given case.

Ever since the discovery of iodine by Courtois in 1812 and its utilization as a medicine in the treatment of goiter by Coindet, Sr., in 1819, and the research work of Lugol in 1827-31, great claims have been made for it.

There were then, as now, some bad results from its use, and these bad results were said by Lebert (who practiced in Switzerland and France) to be due, not to the iodine, but to the too prompt absorption of the abnormal material of the thyroid tumor, which entering the circulation, in the course of its elimination, produced the poisonous effect.

M. Bonet introduced a mode (iodic alimentation) of safely bringing and maintaining the system under the influence of iodine by mixing it with food, as bread or farinaceous substances, so that the patient would take daily a given quantity of the element.

CLASSIFICATION OF THYROID ENLARGEMENT

1. Hyperplasia.
2. Hypertrophy.
Both of these are simple enlarged glands, but may contain colloid masses or cysts.
3. Colloid adenomata and normally innervated and normally functioning adenomata. These are also simple goiters, but capable of becoming very troublesome upon even a slight provocation.
4. Adenomata. These may be benign when normally innervated, or they may be malign.

*Read before Illinois State Medical Society, Quincy, Ill., May 21, 1925.

nant in the sense that they bring about symptoms of hyperthyroidism and exophthalmic goiter.

5. Carcinomata.
6. Sarcinomata.
7. Inflammation of the thyroid—thyroiditis—which very rarely is associated with resultant abscess of the thyroid. In this condition only signs of infection appear, not signs of hyperthyroidism.

The pathology of exophthalmic goiter is still somewhat uncertain and the view taken by some pathologists, that it is essentially a nervous ailment, the symptoms depending upon a morbid state of the sympathetic nerves of the neck, which play an important part in the vasomotor functions, those are, in controlling the action of the heart and regulating the caliber of the blood vessels, is supported in a way, by the experimental work upon the functions of the sympathetic nerves of Bernard, Schiff, Jonesco and others.

The thyroid gland was the first of the ductless glands to warrant surgical interference. This is due in a large measure to its accessibility, the frequency of its lesions, and the well defined evidences of its malformations.

However, in spite of the marked progress in our knowledge of its pathology and of the surgical indications and operative treatment of its lesions, many perplexing features regarding its internal secretion are still attached to the study of the physiology of the gland, and we must look to the research workers in physiology and pathology for their solution.

Exophthalmic Goiter: The symptoms which comprise this disease were ascribed for many years exclusively to overactivity of the thyroid gland with increased production and absorption of its secretion. Of late many observers have been inclined to discredit the thyroid as the unique and all important cause of the symptoms. Recent investigations seem to show a close connection in exophthalmic goiter between the thyroid and other organs. The persistence of the thymus has been attributed an important part in the pathogenesis of the disease, while various observers attach importance to the relationship which they consider has been established between the increased activity of the thyroid and the pituitary, pancreas and chromaffin system, especially the adrenals.

Before entering into consideration of the treatment, it is necessary to define the interpretation of the disease, upon which are based the therapeutic measures advocated and practiced at the present time. It may be assumed that in this disease the structure of the thyroid shows fairly definite changes from the normal, namely, hypertrophy and hyperplasia; that the gland secretes an excess of normal or perverted material which enters the circulation, causes toxemia and secondarily influences the functional and organic conditions of other organs; that the usual type of the disease is represented by symptoms referable to this hyperactivity of the thyroid, modified, if at all, only to a minor degree by other organs, constituting for practical purposes a thyrotoxicosis or hyperthyroidism and, finally, that the symptoms, as a rule, may be favorably influenced by operative measures limited to the thyroid.

Surgery, therefore, by the various operative procedures (sympathectomy, ligation of vessels, removal of more or less of the thyroid gland) aims to cut short the disease, by overcoming the hyperactivity of the gland.

Like medical treatment, it falls equally short of the ideal, as it does not deal with the cause of the condition, but at the present time it is the best method of treatment available for many cases.

Operative Indications: It must be understood that the course of disease is uncertain, and that occasionally, especially early in the disease, patients improve or apparently recover without operation, at times without medical treatment. If improvement is not marked and relatively lasting under medical treatment, operation is indicated unless definite contraindications are present. Moreover, early operation is indicated and unnecessary delay by unduly protracted non-operative measures is to be condemned, because the operative risk is much less in an early stage than in an advanced stages of the disease. The heart and other organs have not sustained permanent damage, and the course of the disease being usually progressive, it is probable in every case that operation will ultimately become necessary.

Contraindications to Operation: Among these may be mentioned profound secondary changes in other organs, especially the heart and kidneys; marked dilatation of the heart; extreme

rapidity and irregularity of the heart action and evidences of severe nephritis if not improved by treatment. Operation should be delayed until the subsidence of gastric crises, acute delirium, ascites, and edema of the hands and feet.

What do we expect to accomplish by operative measures with our present understanding of the disease? 1. To cure as many as possible. 2. To lessen the severity of the symptoms. 3. To shorten the period of invalidism, and to prevent damage to other organs of the body which would otherwise occur. 4. In some cases to save life.

The results are 65 per cent to 75 per cent operated upon for exophthalmic goiter make apparently a complete recovery. The majority of the remainder, 25 per cent to 35 per cent, are improved, but some cases show no improvement, and death occurs in 1 per cent to 4 per cent.

In the cardiovascular group of goiters, including the toxic adenomata and compensating hyperplasias, better results are obtained.

Simple Goiter: Surgical indications in simple goiter are:

1. In pressure disturbances, as upon the trachea, esophagus, recurrent laryngeal nerve, upon the vessels which drain the head, neck and upper extremity giving rise to cyanosis and edema.

2. Suspicion of malignancy: This is suggested by sudden rapid increase in size of goiter, especially if this is associated with pain, and the patient is of advanced years.

3. Deformity or discomfort: While the mere presence of a goiter does not in itself demand operation, the disfigurement, discomfort and possibility of developments in most cases render operation advisable, especially in cases of small adenomata and cysts.

4. Abnormally situated goiters: Intra-thoracic goiters, usually not recognized until pressure symptoms occur, should be removed as early as possible.

5. Symptoms of toxemia: A slow chronic toxic condition which acts on the system somewhat like the acute toxemia of exophthalmic goiter may occur with any simple goiter; especially in those with single or multiple adenomata. These cases should be operated upon early, before changes have taken place in the heart, kidneys, and nervous system.

The operative procedures in simple goiter are:

1. Excision of one lobe, or one lobe and the isthmus.

2. Resection of part of one or parts of both lobes.

3. Enucleation. Separation of a discreet nodule or cyst from the thyroid tissue.

Operative Precautions: In the surgery of the thyroid there are certain general precautions which apply to all thyroid operations irrespective of the indications.

1. The avoidance of trauma to the recurrent laryngeal nerves.

2. Preservation of the para-thyroids to avoid tetany.

3. Preservation of sufficient thyroid tissue to avoid myxedema.

There are certain specific precautions which apply chiefly to operations for exophthalmic goiter and toxic goiter.

1. Careful preparatory treatment until the symptoms are relatively quiescent so as to operate at a favorable time during the disease. All causes of increased metabolism should be removed if possible. A careful differential blood-count made, as a relatively high lymphocyte count is usually found in the severe cases. Attention to the heart, improving its action as much as possible. Rest in bed for a sufficient period of time is very important in the pre-operative treatment. The administration of iodine (as Lugol's Solution) in the exophthalmic goiter cases.

2. Proper selection of the anesthetic and the anesthetizer: careful watchfulness over the action of the heart and respiration during anesthesia.

3. Adequate exposure.

4. Diminution of shock by gentleness of manipulations.

5. Minimum loss of blood and absolute hemostasis.

6. Curtailment of absorption by adequate drainage.

7. Relative speed.

The earlier the diagnosis is made and operative measures used, the better the results will be. Failures are due to errors in diagnosis, delayed operation, insufficient operation, improper pre-operative and post-operative care.

In the after treatment of these patients, we have them raised upon a back rest as soon as they are returned to bed. This position is much better for the patient, and they seem to like it in preference to having the head at a lower level than the body, as advised by some surgeons.

Patients are given an abundance of fluids by proctoclysis and by mouth to promote elimination. The drain is removed at the end of forty-eight hours. Patients are allowed to be up in about one week. Following operation the exophthalmic patient should have plenty of rest, good food, and such internal medication as the individual case demands.

THE MEDICAL ASPECTS OF GOITER*

CHARLES LOUIS MIX, M. D.
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Dr. Moorhead has given the classification based upon pathology. We can make another classification based upon symptomatology; and I would divide thyroid cases into cases of hypothyroidism, hyperthyroidism and dysthyroidism.

If there is anything which we really know about the thyroid gland it is that it is concerned with iodine metabolism. By iodine metabolism we mean the elaboration of iodine for purposes of taking care of the body economy. Iodine has much to do with the internal respiration of the tissues. The substance which presides over this internal respiration and the proper oxidation or burning of all waste products is the thyroxin that the thyroid makes. Whenever thyroid metabolism is seriously interfered with one of the results is a disturbance of the internal respiration of the tissues, with symptoms of acidosis.

Cases of hypothyroidism are those of the goiter of adolescence. They are the cases of hyperplasia and hypertrophy of the thyroid as a physiologic response to iodine deficiency. In cases of adolescent goiter we find a thyroid which enlarges as a compensatory hypertrophy in its quest for iodine. It is simply a defense reaction on the part of nature. There being little iodine in the blood at the disposal of the thyroid the gland enlarges as the ventricle of the heart will enlarge in mitral stenosis and for the same reason—a compensatory proposition.

In those regions of the world where there is little iodine this type of goiter is extremely com-

mon. We find it in all regions where there is a great deal of igneous rock. It is common in Thibet. I read a year or so ago in the *National Geographic Magazine* that it is common in the Himalaya Mountains and that many of the natives have large goiters. Goiters are also frequent in the Alps. They are very numerous in the region of the Great Lakes where there is little iodine in the water. The Iroquois Indians, in the 17th Century, were affected with goiter in the same manner that the inhabitants of the Great Lakes regions are now. In the state of Washington goiter is extremely common, because it is an igneous rock territory. The same is true of Idaho and British Columbia, where igneous rocks abound and where the surface water is so soft it is a pleasure to wash in it.

In those areas of the world where iodine is deficient these cases of hyperthyroidism are especially prevalent. The distribution of these cases proves beyond peradventure of a doubt that they are related to iodine deficiency. And that has led to the adoption of the ingestion of small amounts of iodine in salt for the prophylactic purposes of overcoming this condition. We all know that if you give these patients with adolescent goiter syrup of the iodid of iron or Lugol's solution or iodide of soda in small doses you will cure them. They get well provided they have not been enlarged for too long a time.

If you see these patients for the first time after their twenty-fifth year so much permanent organization of the hyperplasia has taken place that you can get no restoration of the gland to its original size by giving iodine. After the age of twenty-five iodine avails little in these cases. If you get them early in the adolescent stages you can cure them. At Rochester Kendall discovered that in all cases of adolescent goiter the assay of iodine is less than 1/10th of one per cent. In a normal gland it is in excess of 1/10th of 1 per cent. There is then an actual iodine deficiency in these cases of adolescent goiter. The gland enlarges merely in quest of iodine. It is exactly equivalent to the compensatory hypertrophy in conditions in other portions of the body.

Adolescent goiter is easily treated and easily cured provided treatment is begun early in the onset of the disease. It is limited to certain countries and certain areas of the world. We in Chicago derive our cases of enlarged goiters

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from the shores of the Great Lakes. They come from Gary, Waukegan, and Indiana Harbor. They do not come from Elgin, Joliet and Aurora. We get them from the lake towns where there is no iodine in the drinking water.

A second type of case is the hyperthyroidism we see so frequently, and which we used to diagnose as exophthalmic goiter of the masked type. We used to congratulate ourselves when we made a diagnosis of masked Basedow's disease. These cases apparently exist in two groups. I am not sure of my ground, but this I think I know—that there are two groups of cases of hyperthyroidism. One is associated with high blood pressure with an increased metabolic rate and with intoxication. The other is associated with no loss of weight, with no increase in the metabolic rate, no increase in blood pressure, but with the same signs of intoxication. For example, we recently had a patient with hyperthyroidism, showing a basal metabolism rate of minus 20.5 and another patient with a basal metabolism rate of minus 5. Of course both of these patients showed no loss of weight. There was no increased basal metabolism and yet the cases were those of hyperthyroidism. Why? Because they showed the characteristic tachycardia, tremor and disturbances of the sympathetic nervous system.

In this type of hyperthyroidism the thing that suffers most is the sympathetic nervous system; and it suffers everywhere. In the stomach, for example, there is an excess of hydrochloric acid secretion. In the case of the bowel the disturbance of the sympathetic nervous system leads to mucous colitis. Frequently these hyperthyroidic patients show nothing but manifestations on the part of the sympathetic system or an intoxication from the thyroid. They are alike in that they all show tachycardia, whether with diminished body weight or with weight maintained at about a certain level. The data regarding basal metabolism and blood-pressure, whether high or low, may be variable, but the signs on the part of the sympathetic nervous system, the tachycardia and the tremor are present in both types of cases.

Are these cases to be treated by iodine? Not if we believe that hyperthyroidism is the real etiologic factor. If these cases are due to the excessive production of thyroxin, it is evident that more iodine would make these patients worse

instead of better. They behave very like exophthalmic goiter cases in every respect clinically, but they differ in the one respect that iodine makes them worse. The essential pathology in these cases is the toxic adenoma, which should be removed to cure these cases.

The third group of cases are the cases of dysthyroidism or exophthalmic goiter. The reason I place these cases in the dysthyroidism group is because they are not due to an excess of thyroxin. Why should Lugol's solution improve them? We are getting back to old therapeutic ground—the administration of iodine.

During the lifetime of Dr. Murphy a student once asked me in his presence when to give iodine in thyroid disease. I said: "Give the iodine and if it makes the patient worse stop it at once. If it doesn't, keep on with it."

That is our position today. We have gotten no further. Dr. Murphy then said approvingly: "That is about as near as we can get to it." In exophthalmic goiter iodine helps. Our preconceived ideas were that it would not help, because we used to look upon it as due to hyperthyroidism. It is absolutely distinct from hyperthyroidism. These cases are helped by iodine.

I need not go into the symptomatology of exophthalmic goiter. We all know the cases when we see them. The question is as to the essential nature of the thing. Is exophthalmic goiter, after all, nothing but a disease of the thyroid? I question it. It has been thought that possibly it is due to something more than mere thyroid disease. It is well-known, for example, that there is a marked inter-relationship between the various ductless glands. The influence of the thyroid upon the pancreas in pregnancy is well known. In many patients there is a trace of sugar because of the depressing effect of the thyroid upon the formation of insulin in the islands of Langerhans.

In exophthalmic goiter is there not possibly some associated disturbance of the adrenal bodies? Is it true that exophthalmic goiter is merely a case of dysthyroidism? As Dr. Moorhead said, we, in our present state, don't know. Hitherto it has seemed best to remove the thyroid in these cases and thereby to help the patient.

You recall doubtless also another curious fact about exophthalmic goiter, namely that there are clinical cases of exophthalmic goiter alternating with conditions of myxedema over periods of

time. Many such cases have been reported—a combination of myxedema and exophthalmic goiter in the same individual. Evidently some process is going on, some dyscrasia as far as the iodine metabolism is concerned, possibly due to iodine deficiency.

The proper thing to do nowadays in these cases of dysthyroidism is to give the patients Lugol's solution in small amounts—6 to 10 minims three times daily. It is probably still wise to see that the thyroid is ligated or removed in whole or in part, after the beneficial efforts of the iodine therapy have been achieved.

SYMPOSIUM ON GOITER, PATHOLOGICAL VIEWPOINT*

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If we define a goiter as a chronic enlargement of the thyroid gland, then all goiters are anatomically abnormal; the important problem for the clinician is to determine whether such gross abnormalities are associated with abnormal physiological function.

It is almost impossible to offer a pathological classification of thyroid disorders that can be used by the general practitioner. This will become apparent when we discuss certain gross and microscopic thyroid changes that are identical, but the patient will show in the one instance no evidence of abnormal functional changes, in the other instance, extreme thyrotoxicosis is apparent upon examination.

I. PARENCHYMATOUS AND COLLOID GOITER

- a) Parenchymatous goiter
- b) Colloid goiter

Diffuse Uniform Enlargement of the Thyroid Gland: The pathologist usually considers as parenchymatous goiters all thyroids that show grossly, increase in size and microscopically, cellular hyperplasia; that is the alveoli have increased in number. Such is the simple hyperplastic goiter, appearing during adolescence. These simple goiters increase in size in the Great Lake Basin region and following puberty, when the demand for thyroid secretion is not so great, they pass over into the resting stage. The resting or inactive stage of a simple parenchymatous goiter is characterized by an

accumulation of colloid in the alveoli. This then becomes a *colloid goiter*. The lack of iodine seems to play the major role in the excessive hyperplasias in this region. Experience has shown that the administration of iodine prevents the development of the parenchymatous hyperplasias. Colloid goiter does not develop without a previous parenchymatous goiter. Even if neglected until the colloid goiter has developed, iodine therapy will still reduce the enlargement. Both of the above mentioned types of goiter are anatomically abnormal, but this is the result of a physiological compensatory hyperplasia with the maintenance of a normal physiological function. They can probably best be interpreted as the results of iodine deficiency. We wish to emphasize that these goiters occur in young individuals, mostly girls during puberty and if neglected persist for six to eight years after puberty as colloid goiter.

As colloid is accumulated in the alveoli during the return to normal or the resting stage of a simple goiter, several adjacent alveoli become one mass of colloid by rupture of the distended walls by pressure. This tends to interfere with the circulation by pressure upon vessels adjacent to such colloidal areas. The diminution or sudden cessation of the blood supply to a glandular part leads to autolysis or softening and necrosis of the region involved. These areas are encapsulated by connective tissue proliferation at their margins and become cysts. The contents of such cysts indicate to the pathologist the past history of the particular area of tissue involved. All of these areas of degeneration found in goiters are evidence of accidents that have happened to the blood supply. Many cysts are nothing more than hematomas in the goiterous gland. Such degeneration seldom occur in parenchymatous goiter, but are frequently encountered in colloid goiter.

2. *Irregular Nodular Enlargements of the Thyroid Gland:* The neglected colloid goiter oftentimes shows palpable nodular growth upon various portions of its surface. These represent new gland tissue that has been stimulated to grow as a result of a physiological need for the active thyroid hormone. These nodular growths can hardly be regarded by the pathologist as adenomas. Such hyperplasias are comparable to the increase in extent of the red bone marrow after hemorrhage or an increase lymphoid tissue

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in the drainage area of a chronic inflammatory process. All are physiological or functional hyperplasias or increase in cells as the result of an increase in demand that has been placed upon the particular tissue involved. The histological examination of these nodular areas reveals the same cytological picture as is usually found in the simple hyperplastic goiter. It is not uncommon to find several such nodular areas in goiters that show all stages of activity from the high columnar cells lining to low celled colloid containing alveoli; in other words the same picture one finds in active hyperplasia and all gradations to the resting colloid stage. Such nodular areas are ordinarily termed *adenomas*.

If an adenoma is defined as an autonomous growth of glandular tissue, then such areas cannot be compared to adenoma in the glands with duct systems, such as the liver, pancreas, parotid, breast or prostate. The pathologist differentiates between functional hyperplasia that is the result of a purposeful growth and that hyperplasia that is autonomous purposeless and cannot be explained upon a functional or physiological basis. It has become the common practice to call all nodular thyroid enlargements adenomas. Such nodular hyperplastic areas usually develop from thyroid glands that have shown previous periods of diffuse parenchymatous hyperplasia and colloid depositions. So long as there is no evidence of abnormal physiological manifestations, such glands are usually called *non-toxic adenomas*.

Nodular thyroid enlargements of several years duration oftentimes become toxic, that is the symptoms of thyrotoxicosis develop. These disturbances usually follow such exciting causes as, infection, injury, fright, pregnancy, abnormal nervous strain, etc. Such glands are now called *toxic adenomas*. Grossly and microscopically these nodular enlargements that give rise to the thyrotoxicosis symptom complex (the toxic adenoma) cannot be distinguished from the nodular enlargement that is devoid of symptoms (the non-toxic adenoma).

From a pathological standpoint one has long felt that the hyperthyroidism that often develops from diffuse or nodular enlargements is due to a combination of a group of different factors, some of which are outside of the thyroid gland. The recent work of Marine and his co-workers, and also that of To-ku-mit-su seem to show that the cortex of the suprarenal gland plays a role in

thyroid pathology. Inasmuch as the cortex of the suprarenal is closely related to the gonadal system it is very probable that sex glands may take part in the symptom complex so often associated with enlargements of the thyroid gland.

Encapsulated areas of thyroid tissue are sometimes encountered that show closely packed alveoli, lined with cuboidal cells, the lumen is very small and does not contain stainable material. There is almost an absence of stroma. Such areas are usually deep in the gland tissue. These areas are histologically adenomas and show a different picture from the functional hyperplastic areas found in the average nodular enlargements.

3. *Exophthalmic Goiter*: The gland is usually enlarged, but smooth and is very vascular. The hyperplasia of the lining cells of the alveoli is very characteristic. There are infoldings or papillary projections of the epithelium into the lumen of the vesicle, giving an appearance of excessive cellular hyperplasia without new vesicular formation. The living cells show a greater variation in size and there are several layers of cells superimposed upon each other. This is a different histological picture than that found in the diffuse or nodular goiters.

We could briefly summarize the pathological picture by thinking of the diffuse or nodular goiters as that type of hyperplasia that involves an increase in the number of secreting units; Grave's disease is characterized by a thyroid gland that shows hyperplasia of the cells lining the alveoli without an increase in functional units. The exophthalmic goiter presents a greater variation from the normal than the various types of hyperplastic goiter.

Conclusions

The clinical term "Toxic goiter" is not associated with definite gross or microscopic changes in the thyroid gland. Such goiters always show areas of hyperplasia of secreting or functional units of thyroid tissue. Similar pictures are found in thyroid glands that have produced thyrotoxicosis or other abnormal functional manifestations, but have been quiescent or functionally normal for sometime before and at the time of removal.

In the Great Lake Basin region we encounter "toxic goiters" that show a diffuse uniform hyperplasia. Some pathologists have used the term "adenomatosis" for the description of such glands. If this term is used for the thyroid, it

simply means a confusion in the pathologist's mind, in that he has a preconceived conception that all hyperthyroidisms, without the Graves' disease symptom complex, must be adenomas and his diagnosis is a clinical term and not a pathological one. He would hardly call a section from a lactating mammary gland a "mammary adenomatosis."

The theory that the toxic thyroid gland is secreting an unfinished product that gives rise to the thyrotoxicosis is devoid of experimental support. Several workers have produced experimentally thyroid changes, both morphological and functional by surgically removing a part of the cortex of the suprarenal gland, or by transplanting tumors onto the suprarenal cortex (Tokumitsu) and observing the changes in the thyroid accompanying gradated and progressive destruction of the suprarenal cortex.

Iodine therapy may not after all act directly upon the thyroid gland. Experience has shown that neglected simple parenchymatous and colloid goiters show hyperplasias in the third decade of life (20-30 years of age) that are promptly changed into definite "toxic goiters" upon the administration of iodine. If iodine had been administered six to eight years before, the simple goiter would in all probability have disappeared, but now with the same histological picture as was present at that time, iodine caused the appearance of definite toxic symptoms. One is led to the conclusion that there are some other factors involved in the neglected goiters in this region than those present in the primary simple endemic hyperplastic goiter.

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OCULAR MANIFESTATIONS OF EXOPHTHALMIC GOITER AND THE LARYNX IN GOITER*

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A review of the literature discloses a multitude of eye symptoms, assigned to the disease exophthalmic goiter. A large number of these symptoms are of doubtful title and their association with the disease itself still requires confirmation by competent observers.

There are, however, *five* ocular symptoms

which are relatively constant and which are commonly accepted as being a part of the symptom-complex of the disease.

These five symptoms are: First, proptosis of the eyeball, commonly referred to as exophthalmus; second, Von Graefe's sign; third, Dalrymple's sign; fourth, Stellwag's sign, and fifth, Moebius' sign.

I have grouped these five ocular symptoms in the following order. *One* of them, the exophthalmus, concerns the *position* of the eyeball; *three* of them the *Von Graefe*, the *Dalrymple* and the *Stellwag*, concern the eyelids; and one of them, the *Moebius*, concerns the ocular muscles which produce convergence.

A brief discussion of these symptoms is of interest.

Exophthalmus. Of the five ocular symptoms the exophthalmus is the one which holds priority in point of seniority. It appears that in 1835 Graves had mentioned this symptom. The real credit for emphasizing its association with the disease belongs, however, it would seem, to Basedow, who in 1840 published an article and case report, under the title "Exophthalmus from Hypertrophy of the Orbital Cellular Tissue." This article, we are told, was responsible for directing the attention of investigators to the importance of exophthalmus as a classic symptom of the disease.

Exophthalmus is defined as an undue protrusion of the eye from the orbit. From time immemorial the familiar triad of symptoms, *tachycardia*, *enlargement of the thyroid* and *exophthalmus*, have been accepted as the cardinal symptoms of exophthalmic goiter. It is customary to add to these symptoms two others—tremor and increased metabolism. Exophthalmus is found independent of endocrine difficulties, notably in many corpulent individuals in whom a deposit of orbital fat produces the condition popularly known as "goggle eye." It also occurs in subjects afflicted with high degrees of myopia and those subject to anatomical peculiarities such as "tower skull" (Thurmschädel). There are in addition many other causes for exophthalmus, other than exophthalmic goiter, as for example, lack of tone of the ocular recti muscles, which serve to draw the globe backward, orbital growths, cellulitis, disease of the nasal accessory sinuses, etc.

Unanimity of opinion does not exist among

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observers either as to the frequency of the exophthalmus, or the period of its exhibition. Gowers states that it is present in 90 per cent. of cases. Other observers report its incidence, sooner or later, in 65 to 85 per cent. of cases. It is generally recognized, however, as the *first* eye sign to present and the *last* symptom to disappear. Usually it is a relatively late manifestation of the disease, but it may develop suddenly in cases of acute hyperthyroidism. It almost always involves both eyes, but it may be unilateral or more marked in one eye. Its exhibition, development, degree, distribution (mono- or binocular) in relation to other symptoms, notably the goiter, is subject to the same capricious behavior characteristic of most of the other symptoms of the disease. The cause of exophthalmus is still definitely undetermined. The following four theories have been assigned to explain its occurrence:

First, engorgement of the orbital vessels.

Second, irritation of the sympathetic, causing tonic contraction of the unstriated muscle fibers running in the orbit from the equator of the eye to the orbital septum (Landström).

Third, accumulation of fat in the orbit with edema of the ocular muscles.

Fourth, supra-renal insufficiency.

Various instruments called exophthalmometers or statometers have been devised to determine the presence or the degree of exophthalmus. These are not in general use. A simple procedure is to apply a straight edge vertically to the upper and lower orbital margins, the lids being closed. This edge, in the normal position of globe, should just press gently upon the apex of the cornea through the closed lids.

Von Graefe's Lid Sign. Normally the upper lid covers the same ratio of cornea in all movements of the globe, and no portion of the sclerotic is visible at the upper corneal margin. The presence of the Von Graefe sign is detected in the following manner: An object is held before the patient's eyes and he is directed to follow its movements without altering the position of his head. The object is then *slowly* moved downward, when it will be observed that the upper lid lags in following the cornea downward, and in consequence a rim of sclerotic at the upper portion of the cornea will become exposed.

The incidence of this sign in this disease is reported in from 14 to 55 per cent. of cases.

Numerous theories, without practical agreement, have been advanced to explain the symptom, the most tenable perhaps being that the irritation of the sympathetic produces a spastic contraction of the musculus tarsalis superior. It is important to emphasize that in eliciting the sign the patient must look down *slowly*.

Dalrymple's Sign. This sign consists of a retraction of the upper lid with consequent widening of the palpebral fissure. This produces in the patient the so-called "*Look of Fright*" or "*Staring Expression*." This sign is also found in hysteria, tetanus, orbital tumor, etc.

Stellwag's Sign. This sign consists of a diminished frequency of winking. Normally the function of winking distributes the lachrymal fluid over the cornea, bathes it, clears the cornea of dust, and prevents the corneal layers from drying. Winking takes place normally three to ten times per minute; in Graves' disease it may not take place more than once in several minutes. Interference with this corneal protective function exposes the cornea to irritation and infection. The symptom is said to occur in 30 to 50 per cent. of cases.

Moebius' Sign. This sign is a reduction in the convergence function. Many observers believe that the various lid phenomena, as well as the lack of convergence power, associated with exophthalmic goiter have their entire explanation and basis in the exophthalmus, as a primary mechanical disturbance.

The foregoing ocular manifestations of exophthalmic goiter are in many cases of undoubted value to the clinician as aids in diagnosis, estimating the clinical progress of the disease and often are of a determining nature in outlining a satisfactory management of these cases.

Apart from these considerations there is another important ocular problem which exophthalmic goiter cases often present which should be mentioned. It relates to the danger to vision and the integrity of the eye itself which may be precipitated by a marked exophthalmus, alone or accompanied by an exaggerated infrequency of winking (Stellwag's sign).

If the degree of exophthalmus, for example, be considerable, the eyelids are unable to close, winking is inhibited and in consequence the eyeball is robbed of its protection and damage to the delicate corneal layers ensues which may eventuate in corneal infection and ulceration.

This condition of inability to completely close the lids, due to the exophthalmus associated usually with infrequency of winking (Stellwag's sign) is known as Lagophthalmos. It is important to emphasize that this condition is not alone present during the patient's waking hours but is also present during sleep. In the latter periods it is likely to be overlooked if it be not carefully sought for. As I have stated, this failure of the lids to close properly, together with the infrequency of winking, is a serious handicap to the maintenance of ocular integrity. Corneal infection and corneal ulceration are always grave ocular lesions, and they are exceedingly likely to develop in an eye which has suffered the loss of its lid protection and the physiological necessities the winking function supplies. I have personally encountered a case of exophthalmic goiter in which the eye was lost from corneal ulceration followed by panophthalmitis due primarily to corneal exposure caused by the failure of the lids to properly close and protect it.

In all goiter cases, therefore, accompanied by marked exophthalmus and diminished winking function, measures should be provided to insure the eye its protective lid function. In sleep particularly the patient should be observed to note if the lids properly cover the eyeball. The measures of relief comprise bandages, adhesive strip, and if these fail, various surgical procedures to attain the lid protection for the eyeball. A fundus eye examination is useful in investigation of the circulatory or renal complications which are not uncommon to exophthalmic goiter.

There are few patients who provide the opportunity for really helpful practical "Team Work," such as exophthalmic goiter cases present. The value to the internist and surgeon, of a thorough eye investigation in these cases, can hardly be overestimated. The data such an examination supplies is useful as an aid to diagnosis, helpful in determining the intensity of the disease and likewise its clinical progress and is frequently of service in determining a proper plan of management. In addition such an ocular investigation may forestall serious visual impairment, perhaps loss of the eye itself.

In carrying out such an investigation the largest yield of information is obtained if an orderly, systematized routine plan is adopted in every case, covering the eye in general rather

than merely an investigation of certain prominent ocular symptoms of exophthalmic goiter.

In my own investigation of exophthalmic goiter cases I have found it of advantage to carry out the following routine method of ocular investigation:

1. Determining the visual acuity.
2. Tension of the globe.
3. Ocular and lid excursion.
4. Iris, pupillary reflexes equality and regularity.
5. Condition of cornea (anesthesia, opacities, ulcerations, etc.).
6. Anterior chamber.
7. Fundus examination.
8. Refractive error.
9. Investigation of the various ocular phenomena associated with exophthalmic goiter previously described with particular emphasis directed to the degree of exophthalmus, frequency of winking, and the ability of the lids to properly close and protect the cornea, both in sleep and during the waking period.
10. Field of vision.

Summarizing, the following conclusions may be mentioned:

First, a routine eye examination should be made in every exophthalmic goiter case; it supplies data of service in arriving at a diagnosis and prognosis and is helpful in determining a proper course of management.

Second, impairment of vision, perhaps loss of the eye itself, may be averted by early recognition of such possibilities and timely institution of proper safeguards.

THE LARYNX IN GOITER

There are certain anatomical and physiologic facts which should be given emphasis in considering the larynx and goiter.

The most important physiologic fact is that the larynx is an organ of *respiration* as well as of *phonation*. Its phonatory function is invaluable but its respiratory function is *vital*.

It is therefore incumbent upon the clinician and surgeon to recall that the respiratory function of the larynx must be conserved even more so than the phonatory function. Underlying this physiologic concept of these laryngeal functions are various anatomical considerations which are of importance. The recurrent laryngeal nerve

is the chief motor nerve of the larynx. It is well known that this nerve is made up of two distinct sets of fibers, one set being distributed to the laryngeal muscles, which are in the main responsible for *respiration*; another set being distributed to the laryngeal muscles which are, in the main, responsible for *phonation*.

It has been found that the nerve fibers which are concerned in the voice production outnumber those which are concerned in respiration, in the ratio of three to one. It would naturally be assumed from this anatomical fact that the respiratory function of the larynx is much easier disturbed than is its phonatory function.

This assumption is corroborated by clinical experience. Paralysis, partial or complete, of the vocal cords may be due to pre-operative disturbances, such as pressure on the nerve from thyroid tumors or an hypertrophied thyroid; or *operative* or postoperative due to hemorrhage, injury, etc.

Lesions of the nerve result in both subjective and objective symptoms.

The precise character of the paralysis and its degree is the determining factor in the symptomatology presented. Certain lesions may affect only the respiratory function, dyspnea being marked, phonation being undisturbed; other lesions affect only the phonatory function, impairment of the voice being marked, respiration being undisturbed; while other combination lesions affect both respiration and phonation. Briefly the variation of lesions may be summarized as follows: -

First, complete bilateral paralysis. In this lesion both cords are separated in the so-called cadaveric position, respiration through the aperture their separation provides, is possible, and in consequence, there is little or no embarrassment of respiration, and accordingly little dyspnea; since adduction of the cords is suspended however, the phonatory function is destroyed and the voice is lost.

Second, in bilateral complete abductor paralysis the cords are closed and since no abduction of their margins is possible, respiration is seriously interfered with, dyspnea is marked; the voice, however, is not greatly impaired.

Third, in unilateral complete paralysis the voice is mainly affected; dyspnea is absent.

Fourth, in unilateral abductor paralysis the

voice is somewhat impaired and dyspnea occurs on exertion.

Fifth, in complete paralysis of one cord with partial paralysis of the other the voice is lost and there is dyspnea on exertion.

It is evident that the laryngeal symptoms depend almost entirely on the selective variety of mechanical disturbance set up by the various type of lesion.

The majority of observers agree that laryngeal paralytic lesions associated with goiter are usually *unilateral* and involve the abductor fibers.

A bilateral paralysis speaks for a central lesion, usually a specific infection.

It is a common experience clinically to discover a beginning vocal cord paralysis in a goiter patient who does not complain of either voice disturbance or dyspnea. This clinical fact should emphasize the importance of careful routine laryngeal examination of such patients, especially before an operative procedure is instituted.

From the standpoint of the patient's safety, the bilateral abductor paralysis type of lesion is exceedingly dangerous, since interference with respiration may come on most unexpectedly and cause sudden death.

As to prognosis for voice recovery, this depends of course upon the cause, duration and severity, etc., of the paralysis. A voice impairment consequent upon a long-continued pressure from an enlarged thyroid does not present a particularly hopeful outlook for voice recovery even after removal of the goiter. Operative paralysis coming on immediately at the time of or immediately subsequent to operation present likewise a discouraging outlook.

If operative paralysis develops gradually after operation, usually in the course of time the voice function is recovered.

Summarizing, it is clear that an investigation of the larynx is of great importance in patients suffering from goiter. Aside from the medico-legal aspect of the case, and the protection it confers upon the surgeon, a distinct protection accrues to the patient. Data may be obtained from such an examination which may be of direct benefit to the patient, his present comfort and safety, and such data may also provide the surgeon with useful knowledge in carrying out his operative procedure.

Such examinations, therefore, I believe, should

not be occasional or in special cases only, but should be *routine*, applicable to every case of goiter, whether the patients present laryngeal symptoms or not.

I believe further that when a goiter patient presents a laryngeal paralysis, however mild and no matter of what type or degree, the other well known causes of paralysis such as a specific infection, aneurysm, etc., should be eliminated as possible causative factors. Personal experience also in a number of cases convinces me that in some special way metastases from a purulent focus, such as the tonsil, teeth, nasal accessory sinuses, etc., do, at least occasionally, influence the thyroid gland. I have repeatedly seen a goiter reduce in size following a tonsillectomy. I have also noted a thyroid enlargement, following an acute tonsillitis.

I feel sure, therefore, that these structures should in every goiter case be investigated and if pathology be found it be remedied, if possible, before the goiter operation is undertaken.

Summarizing, the following conclusions seem warranted:

1. The larynx possesses a dual function, *respiratory* and *phonatory*.

2. Interference with either of these functions is common in goiter cases either during the clinical development of the disease, or during or subsequent to an operative procedure.

A paralysis of the larynx may be present without the patient exhibiting either an impairment of voice or difficulty in respiration.

3. A laryngeal examination should be made as a routine procedure in every goiter case and the precise type of laryngeal involvement noted.

Such examinations are of distinct benefit to the patient, many times life saving in character; they also protect the surgeon and often assist him in carrying out his operative details.

4. In every case of laryngeal paralysis, notwithstanding the presence of goiter, other well known causes of such paralyzes, such as aneurysms, specific infections, etc., should be excluded.

5. Metastatic infections, having their foci in diseased tonsils, the nasal accessory sinuses, the nose and teeth, often influence a goiter and these foci should be investigated as a routine procedure in every goiter patient.

30 North Michigan Avenue.

SOME EASILY OVERLOOKED MANIFESTATIONS OF CIRCULATORY FAILURE WITH REMARKS UPON DIAGNOSIS AND TREATMENT.*

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A good many years ago an internist friend and I were walking over Walnut Street bridge, Philadelphia, discussing the physical diagnosis of diseases of the heart. In our youthful ignorance we agreed, like the three tailors in Tooley Street, that it was a closed chapter, that all was known that ever could be known, and we had best devote our untapped energies in physical diagnosis to some other branch of medicine if we wanted to make discoveries.** Little did we think that in a small provincial town in England a man at that very moment was blazing a new path in cardiac diagnosis, and that his work was to revolutionize a subject we believed to be perfect and unchangeable.

Sir James Mackenzie and those who have trodden in his footsteps have created a new science, and with it a new language, that would sound strange to the ears of Corvisart, Stokes, Bamberger, Skoda, Grainger Stewart, and Rosenbach.

If I venture tonight to touch upon the subject of heart disease, I am standing with one foot in the old world of physical diagnosis and with the other in the new world of laboratory diagnosis. The new, be it remembered, has not displaced the old; the one supplements the other.

I want to speak of some manifestations of circulatory failure, the picture of which is very obscure, often misleading the unwary and sometimes the expert. Even Mackenzie—il maestro di color che sanno—I am sure has sometimes gone astray.

I want to deal with a few of the more anomalous manifestations of early and late cardiac failure, and discuss the ways and means of recognizing and treating it.

The term "failing heart power" gives the im-

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**In this connection it is interesting to recall that the great Andral in 1829 wrote the following: "Since the publication of the immortal researches of Corvisart, and of numerous other works subsequent to his, which have still further enlarged the dominion of science, the history of diseases of the heart and its membranes are to be regarded as almost complete."

pression that the heart alone is concerned in the pathogenesis of the symptoms. That is our traditional mode of expression, but it is inadequate and incomplete. Hence, before going further I want to make it clear that when I speak of failing heart power I have in mind the entire circulatory apparatus, which though anatomically divisible into heart, arteries, veins and capillaries—is physiologically one great organ. Heart failure, therefore, nearly always means circulatory failure. The need to emphasize this conception comes from the fact that we have not hitherto given enough attention to the other components of the circulatory system, the heart having completely filled our horizon. Studies on venous pressure, capillary circulation, gaseous exchange in the lungs, and osmosis, are throwing a flood of light on the subject of failing circulation.

As a rule the earliest sign of failing heart power is shortness of breath on exertion. When that symptom obtrudes itself few men fail to recognize its meaning. Nevertheless, mistakes are common. If the dyspnea is pronounced and is associated with coughing and wheezing, the diagnosis of asthma is often made. If a murmur is detected, the term "cardiac asthma" is generally used; in the absence of a murmur the diagnosis is apt to be plain asthma.

Many men, especially those who have not served in a large municipal hospital, hold to the view "sans murmur, no heart disease." This is a very pernicious doctrine, for it means overlooking many instances of failing heart at a time when the condition is remediable.

I hear some one say if no murmur is present, how can you tell the heart is diseased? By ordinary physical examination, which usually reveals the following departures from the normal:

1. The apex beat is a little to the left of the normal position.

2. Percussion reveals enlargement of the area of cardiac dullness.

3. Auscultation is at times the least informing, although to the trained ear something in the sounds—muffling of the first sounds or perhaps a prolongation of it—is suggestive.

The electrocardiograph proves helpful in localizing myocardial lesions, but in daily practice is rarely available.

What about arrhythmia? Arrhythmia may be absent and yet the heart may be gravely diseased; the reverse is also true. Extrasystoles and auric-

ular fibrillation while often found in failing hearts, are entirely compatible with normal function, and of themselves and by themselves are not of much prognostic value.

A gallop rhythm may be significant if it is of the cantering type, that is, if produced by a duplication of the first sound like the Greek anapest meter.

One other sign is often present in cases of early cardiac disease—a few moist rales at the bases of the lungs on deep breathing. They may be heard only on one side, usually the one on which the patient is lying. Naturally when the stage of edema of the legs is reached, the diagnosis is no longer in doubt.

Gastric symptoms sometimes usher in failing circulation. Even if not the first manifestation, they may come to dominate the scene.

The following case is an illustration of what I have in mind:

A married woman twenty-seven years of age consulted me on account of persistent vomiting. She stated that she had been well until April, 1922, when her vomiting began suddenly. She stayed in bed for a week and the vomiting ceased, but she was a little short of breath, although able to lie flat, and had occasional attacks of palpitation. Since that time her chief trouble has been recurrent painless vomiting. Her previous history is meager in point of significance. She has never had rheumatism; she had slight tonsillitis, no chorea. She was married eight years ago and has two healthy children, one seven years and one eighteen months old with a miscarriage between them.

The attacks of vomiting, with the emphasis she laid upon them to the exclusion of other symptoms, made us at first suspect some primary gastric disease. Examination, however, showed a double mitral murmur, a large heart and a large liver without any edema anywhere. In this patient, the cardiac failure was rather advanced and yet vomiting was the chief symptom. It was evidently connected with congestion of the gastric mucosa and liver.

Another striking feature in this case was the marked enlargement of the liver without visible edema. One usually expects some degree of dropsy when the liver is greatly enlarged as a result of cardiac decompensation. It is, however, possible, as this case illustrates, to have the decompensation fall principally upon the liver. That organ can hold an enormous amount of blood. I am in the habit of comparing it to a lock in a canal—for a time it can hold back large quantities of stagnant blood, eventually, however, there is a spilling over with the appearance of edema and ascites.

The important point in this matter is that such enlargement of the liver without the familiar

signs of decompensation is liable to lead to diagnostic error. In several instances I have seen the diagnosis of malignant tumor made.

Particularly difficult are the cases of mitral stenosis with enlargement of the left lobe of the liver producing a prominent tender epigastric tumor. Since the murmur of mitral stenosis is often inaudible, the true cause of the enlargement of the liver will not be suspected, and the apparent tumor will be interpreted as a malignant growth.

On one occasion the late Dr. W. L. Rodman asked me to see a patient prior to operation for gastric cancer. There was vomiting, failing appetite, loss of flesh and the presence of a large tumor-like mass in the epigastrium. I found that the case was one of mitral stenosis with a left lobe enlargement of the liver.

Cough is a common feature of beginning as well as of advanced decompensation. In rare instances it is so severe as to be an overshadowing symptom, as in the following case:

Mrs. T., a widow of about sixty-eight years of age, had for some time been troubled by a harrassing, unproductive cough and insomnia. My first impression when I saw her was that she was suffering from chronic bronchitis with some degree of emphysema.

To my surprise I found on examination that the apex beat was in the anterior axillary line. There was no murmur, no arrhythmia, no effusion, no edema. Treatment on the basis that the cough was an expression of cardiac weakness proved helpful, but not for long. The damage to the myocardium was beyond repair.

Here the old fashioned methods of inspection, palpitation and percussion gave the required information. The Hippocratic practice of using the eyes and hands and that of the immortal Auenbrugger of using the fingers were quite adequate for the needs of the situation.

That myocardial weakness may simulate malignant disease of the gastro-intestinal canal may at first sight seem unlikely, but the following case proves it.

I was once called to Johnstown, Pennsylvania, to see a physician, fifty-four years of age, who was suspected of having malignant disease either of the stomach or bowel. The chief symptoms were great weakness, an epigastric pressure feeling with eructation of gas on exertion, poor appetite, loss of flesh and increasing despondency. When I heard the story and saw the patient, I was quite prepared to accept the diagnosis. An x-ray study of the gastro-intestinal tract had been made but the pictures gave little information. On examination I found that the heart

was somewhat enlarged, the sounds extremely feeble and the blood pressure low. There was neither arrhythmia nor murmur. With some trepidation I made a diagnosis of myocarditis—using that term in the clinical sense—and attributed everything to circulatory weakness. Under digitalis and other appropriate treatment the patient recovered in a short time and afterwards visited me in Philadelphia. The heart was still slightly enlarged but fully competent.

I must confess that when I took the train home from Johnstown, I asked myself the disquieting question "is it heart disease or is it latent cancer?"

Much more common than the resemblance to malignant disease is that to the severer forms of nervous or functional dyspepsia. Sometimes the gastric manifestations in early circulatory failure, as in the first case I mentioned, are so prominent that they focus the attention upon an innocent organ, the stomach, rather than upon the heart.

The following case is illustrative of this fact: L. P., physician, fifty-four years of age, had "suffered from gas"—bloating and belching—and from signs of epigastric pressure for several years. A noted gastroenterologist whom he had consulted lavaged and dieted him but to no avail. When I saw him I ascertained that in addition to the gastric symptoms, which were the only ones he really stressed, he had a little shortness of breath and a sense of great exhaustion. Physical examination showed some enlargement of the liver, decided cardiac dilatation, a regular heart but with distinct bruit de galop. The case was clearly one of progressive myocarditis with predominantly gastric symptoms.

Ascites as a solitary transudate or exudate is usually attributed to cirrhosis of the liver, sometimes to tuberculous peritonitis, or to malignant disease. Nevertheless such a silent ascites may be due to cardiac failure and is an exception to the rule that ascites, dropsy and pulmonary congestion and perhaps hydrothorax are usually found in association in cases of heart failure. Adherent pericardium is the chief cause of ascites as a monosymptomatic expression of heart failure. Occasionally the cause is a chronic myocarditis. The diagnosis can be made by careful attention to the physical signs, in particular to the presence of marked increase in the area of cardiac dullness.

Hydrothorax may be the only objective manifestation of a failing heart. As a rule the effusion is on the right side, but it may be on the left. If the case is one without a murmur, the cause of the hydrothorax may be misinterpreted. An overlooked hydrothorax may be the obstacle to suc-

cessful digitalis therapy—when the effusion is removed, the drug takes hold.

Pulmonary edema. I have in mind the sudden so-called apoplectiform edema of the lungs, which sometimes occurs in cases of mitral stenosis. It is terrifying in its violence both to the patient and to onlookers. It may come on without the slightest warning, and has appeared occasionally during or after labor. In addition to sudden onset, a tendency to recur is one of its striking features. If properly treated, it is rarely fatal, but the physician must be familiar with its significance and management.

Pulmonary hemorrhage, as a symptom of cardiac disease, is quite well known. It is most frequent in mitral stenosis, the murmur of which, as I have already stated, is frequently inaudible. That explains a fact well known to sanatorium physicians, that cases of hemoptysis due to mitral stenosis are very often diagnosed as pulmonary tuberculosis. One should always, in sudden pulmonary hemorrhage, think of this fact, especially if the patient is a young woman.

A few years ago I pointed out the occurrence of *psychoses* during the course of heart disease. It is very easy in such a case to conclude that the patient has some form of independent insanity, when in reality the mental manifestations are dependent upon the heart lesion, more rarely upon digitalis.

One other subject should be mentioned because of its practical importance. As you know, in cases of failing heart with dropsy, the urine often contains albumin and tube casts. To many minds these urinary findings are proof of nephritis, of some form of Bright's disease. Such an opinion would receive corroboration if the physical examination showed a regular, murmurless heart. When not called nephritis, such cases are spoken of as cardiorenal cases or as chronic parenchymatous nephritis with hypertrophy and dilatation of the heart. The following story illustrates the point I wish to make:

One day I came into my wards at the Philadelphia General Hospital and asked the intern what he had for my class. He replied, "I have a good case of Bright's disease."

The patient had just had a hot pack and seemed greatly exhausted. On examination I found that he had general anasarca, and a perfectly regular heart without murmur. The urine contained a large amount

of albumin. To all appearance the diagnosis was justified. Examination, however, showed that the case was one of great dilatation of the heart with secondary passive congestion of the kidneys. The hot packs were stopped, digitalis was administered and complete rest enjoined. In a short time the patient left the hospital with good compensation and normal urine.

The differentiation between cases of nephritis with secondary cardiac failure, which are the true cardiorenal cases, though better called renocardiac, and cases of primary heart disease with passive congestion of the kidneys, falsely called cardiorenal, is not easy. The phenolsulphonephthalein test is often fallacious, giving reduction in both types. The blood chemistry is likewise of little help. In time the therapeutic test may determine the correct diagnosis for the primary cardiac cases often recover from the attack while the true renal cases generally go on to a fatal termination. For rapid bedside distinction the character of the urine is of great value. In cases of congestion of the kidneys secondary to heart failure, the urine is dark, strongly acid and throws down a heavy pinkish sediment of urates. This does not occur in true nephritis. A feature in the history is also important, namely that heart cases often have a record of repeated admissions to hospitals, each for a cardiac break. This is not the history of nephritis.

Treatment—I now come to the subject of treatment. It is not necessary to dwell on the well known principles of rest, diet, and digitalis.¹ I want to emphasize the importance of not overlooking a large effusion, which acts as a hindrance to the heart and prevents it from reacting properly to treatment. A single tapping may suffice to change the complexion of the case completely, or it may be necessary to tap two or three times. Recently a patient, W. M., 57 years of age, came to see me on account of great prostration and shortness of breath. He had been under treatment for heart trouble, but had been steadily getting worse. I found an aortic insufficiency and all the characteristic signs thereof, but that was not sufficient in itself to explain the man's disability and dyspnea. The discovery of a large effusion seemed to be an adequate explanation. I had him tapped and a quart of fluid was removed, with the result that he has been a changed

1. When digitalis fails, apocynum cannabinum may be used.

man, and is eager to resume his occupation as a teacher of manual training.

Sometimes despite every effort the dropsy persists. The integument is full of water, the face puffy and cyanosed, the serous cavities filled, the genitalia swollen, the lower limbs enormously enlarged. The patient has to sit up night and day, gets very little sleep, and is in an altogether pitiable condition. I have seen patients in this state recover completely from the dropsy and the serous effusions and live for several years as a result of a simple procedure, very ancient though forgotten by many, namely scarification of the legs. The following case is an illustration:

Mrs. C. H., forty-two years of age, married, was seen on September 21, 1921, with Dr. I. V. Levi. The patient had been dropsical since July. The urine was very scanty—eleven ounces in twenty-four hours—and contained albumin and casts. She had been digitalized several times, and had come to have an absolute intolerance for digitatis. Whether given by mouth or hypodermically, it always produced immediate nausea.

I found her sitting up in bed; her face was swollen, the cheeks purple, the lips of a maroon color. She was dropsical from head to foot; her legs were enormous; there was fluid in the abdomen and probably in the chest. The heart was enlarged to the left and irregular, and at the apex a blowing systolic murmur could be heard.

The heart rate on auscultation was 156, the pulse at the wrist 86, a deficit of 70 beats.

As there was no preparation of digitalis that had not been tried in the patient, either by mouth or hypodermically, there was no profit in persisting in its use.

At my suggestion the patient's legs were scarified with numerous incisions on the outer and inner surface below the knee. The result was wonderful. The edema entirely disappeared from the integument, and the patient was able to go home. I saw her again, and found her limbs of normal size; there was no edema of the skin, but a well marked ascites was present. This was removed by tapping.

Early this past summer I was walking through the lobby of an Atlantic City hotel when a man accosted me, and asked me to step over to meet his wife. I was somewhat nonplussed as he was a stranger to me, nor could I recall having seen the lady introduced as his wife, but when she told me her name I remembered her at once. It was Mrs. H., the dropsical woman whose legs I had scarified two years before. She seemed perfectly well and was enjoying life at the seashore.

It may not be without interest to those who take pleasure in medical history to quote something upon scarification which I found in a book called "The History of Physick; from the time of Galen to the beginning of the 16th Century,"

by J. Freind, M.D. In a work by Sylvius de le Boe this author (de le Boe) relates from Asclepiades the manner of curing an anasarca very exactly. "This is by making incisions on the inside of the leg, about four fingers breadth above the ankle, as deep as generally those in bleeding are made. At first a little blood issues out; after, there is a continual discharge of water, without any inflammation, so that the aperture cannot be closed, till the humor is spent, and the swelling gone down: and this drain cures the Distemper without any internal medicine. Leonides, the Alexandrian, an author who lived after but near Galen's time, and whose remains we find chiefly in Aetius, says further, "that if the incisions in the legs do not make a discharge quick enough, some ought to be made in other parts of the body; in the thighs, in the arms, or in the scrotum, if swell'd, by which means a great quantity of watry matter may be evacuated." Archigenes adds, "that by these scarifications, not only the swelling of the thighs and legs, but that of the belly has been found to subside. And, no doubt, where an ascites is attended with an anasarca this method may succeed in some degree; though in a simple ascites it must be ineffectual." The operation itself is mentioned by Hippocrates; and has been practiced from his time, down to our own days, with great success.

I once measured the amount of fluid by having a double-bottomed tray made on which the patient rested her feet. We collected 35 oz. of serum in a day. That is by no means as much as is drained off in some cases, but it cannot be measured because it soaks into the dressings.

Southey's tubes may be used, but they have no great advantage over scarification. Infection is rare in either case, the serum being in a measure bactericidal.

I usually make about six cuts an inch to an inch and a quarter long on the outer and inner aspects of the leg below the knee. The incisions are carried through the skin into the subcutaneous cellular tissue. A little blood may flow at first, but it soon gives place to a continuous stream of watery serum.

When a patient recovers from typhoid fever or pneumonia, the credit seldom belongs to the doctor directly. The vis medicatrix naturae left to herself is capable of battling successfully with many acute and chronic infections. In cases of

advanced circulatory failure with serous effusions, general dropsy, inactive kidneys, and the whole train of well known symptoms, Nature left to herself lets the patient die.

But when we succeed, either by drugs or by scarification, in restoring the patient to fair health, then we have achieved a real triumph. Then we have fulfilled one of the greatest missions of the physician—we have done what nature unaided could not do.

SOME PHASES OF THE CANCER QUESTION.*

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The cancer question as we see it today presents many phases. Every way we look we are met by serious disappointments. We speak of cancer as having an election for areas of chronic irritation and yet practically this amounts to little more than an opinion based on a multitude of observations having innumerable exceptions. A conspicuous example is the rarity with which old varicose ulcers of the leg develop epithelioma although it is one of the most irritated of lesions. At best irritation can only be a minor cause, requiring certain unknown associations to make it operative. What these unknown factors may be is unexplained. No question has received so much and such persistent study from so many angles and yet resisted reasonable explanation. Few questions have given rise to so many theories which for a time seemed to bear a ray of hope and finally fail. It is difficult to name a single phase of the disease on which the best workers and observers are in complete agreement.

Age is an important etiological factor but about all we know about it is that it occurs most frequently in women between the ages of thirty-five and fifty-five and in men reaches its maximum at sixty-five. Other ages are not immune and in making a diagnosis in an individual case this factor assumes a secondary importance. Age is important in making the examiner remember that one woman in eight, and one man in fourteen over forty-five years of age die of cancer and that we must be constantly on guard in dealing with such individuals. But this should

not lead us to be less on guard in studying younger patients. This does not mean that age is a cause factor but that it is only one of susceptibility.

A few years ago a great deal was said in support of the idea that there was going on a rapid increase of cancer in all countries. The increases shown in the statistics of various countries are probably due to two causes, the better collection and classification of the data and the improved accuracy of diagnosis. No statistics are of value which are not built on an age basis.

Sex is of no special importance if we eliminate cancer of the breast and cancer of the uterus. If we eliminate cancer of the breast and uterus in women we find its incidence in men and women about equal. There are other slight differences but they assume no causative importance.

Heredity is a factor of less importance. Heredity as a cause may be dismissed with the following quotation from Francis Carter Wood: "It is evident, therefore, that heredity plays no part in determining the frequency of cancer in human beings."

When we consider race and locality in studying the causes of cancer we must study the vital statistics of various countries. Without the greatest care such studies may be misleading. For example in one country or state the population may contain a large proportion of comparatively young people and therefore will show a lower mortality rate from cancer than another country or state from which large numbers of the younger population have emigrated. Such statistics must have the age factor carefully checked. The care with which vital statistics are gathered and the average ability of the medical profession to make a correct diagnosis must be taken into account. In the final analysis the best students of cancer statistics have found that in countries with the same social conditions and age distribution and the same diagnostic ability on the part of the medical profession, there will be little or no difference in the incidence of cancer. The same is probably true for different races if they live under the same social conditions.

Formerly the existence of cachexia was considered an important diagnostic sign and many were led to believe that it was due to some specific toxic substance produced in or by the growth. The condition is now regarded as due to mental

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depression, interference with nutrition or reflex disturbances of the sympathetic nervous system. As an aid in diagnosis it comes too late to be of any practical value. It is an important factor in prognosis although frequently absent in advanced cases.

Much has been said about the possibility of contagion in cancer but there seems to be a complete lack of facts on which to base such a conclusion. Wood and others have called attention to the fact that there is no proven instance where surgeon or a nurse, who are most frequently exposed, have contracted cancer from handling a patient. Experimentally it has been found difficult to transplant a primary tumor from one animal to another. Such efforts have never yielded more than two or three per cent. of takes.

Ever since Virchow's time much work has been devoted to the tissue pathology of cancer. The report of Jensen (1903) showing "on a large scale that malignant tumors in mice and rats can be transplanted indefinitely within the same species" gave great promise of practical value.

There are certain causes which might be called pathological causes which have received much discussion and experiment. Cohnheim suggested that embryonic cells are left in tissue where they do not belong and later take on active proliferation producing cancer. No one has explained satisfactorily why such cells should be quiescent for years and then suddenly begin to grow. The theory of displacement of adult cells by inflammation, or the presence of microorganisms, spirochetes, or moulds in the tissues does not explain how or why the cells in their neighborhood should suddenly take on entirely new characteristics of growth.

A ray of hope in a new direction is given by the facility with which Rous chicken sarcoma can be reproduced by "means of the fluid pressed from the cells of the tumor and filtered through a Berkefeld filter." This stands today as only an isolated observation. The microscope has revealed no particles in such fluid and all efforts to cultivate from it a microorganism has failed. Likewise, no ferment or toxic product has been secured from cancer cells which has not been demonstrated in normal cells. If cancer is due to a microorganism, and there are many who believe on theoretical grounds that it is, such a parasite has not been demonstrated to the satis-

faction of any considerable number of observers. Such parasites must of necessity be radically different from any heretofore cultivated.

When one studies the pathology of tumors and bases a classification on it we find great and to the clinician unexplained differences of opinion among equally competent observers. A good example of this is seen in the careful observation of a large number of cases of chronic mastitis by Bloodgood. Most of these cases were under observation for many years and yet not to exceed two per cent. of them developed cancer. That is, according to Bloodgood's observations, not more of these cases developed cancer of the breast than would be found in a similar number of women selected at random. Bloodgood's conclusions were based on studies of 350 cases of chronic mastitis. On the other hand Ewing and Cheatele, equally trustworthy observers, consider chronic mastitis to be a precancerous condition. Cheatele considers the term "Chronic mastitis as misleading as the condition is essentially one of hyperplasia of the breast tissue."

As pathologists of long experience who have combined both clinical and laboratory methods it would be difficult to quote higher authority and yet they seem to stand diametrically opposed in conclusions. Some account must always be taken of the accumulated opinion of the years both lay and professional. In the case of chronic mastitis as a precancerous lesion this opinion is largely in support of Ewing and Cheatele.

The differences of opinion between pathologists and surgeons, and among each other are still more bewildering when we come to consider cysts of the breast. In the April number of *The British Journal of Surgery*, Raymond Johnson discusses the various types of tumor found in the breast. Regarding cystic disease he says, "The position seems to me very perplexing, for I have been in the habit of removing just that part—the big cyst—which Cheatele regards as the least dangerous, and leaving most of the rest of the breast with its small cysts, which he considers the most dangerous." This quotation is a fair example of the perplexing differences of view which we find among the highest authorities.

There is a great mass of literature of cancer in which the discussion is entirely from the experimental side and seems to take no account of the patient and his hope of cure—the only thing that brings him to the doctor. As good a man

as Ewing¹ in a recent discussion of the cancer question says in regard to precancerous lesions. "In dealing with precancerous lesions it is generally safe to regard them as benign if there is any doubt about the matter. They should not be included in the statistics of cured cancer." No doubt in the hands of Ewing this statement is reasonably safe. But the question turns entirely on the judgment of the pathologist in dealing with one of the most delicate questions on which he is required to pass. My own experience is that most cases in which the pathologist has reported a precancerous lesion, in cases of tissue removed for diagnosis, that there has been a recurrence where a radical operation has not been made immediately, and sometimes in those cases where immediate operation was made.

Ever since the days of Virchow there has been a continuous effort to build an acceptable and permanent classification of tumors. One of our best students (Wood) of the cancer question says: "The classification of tumors has long been based on the microscopical identification of the tissues from which the growth arises, but in as much as our knowledge of the causation of tumors is incomplete, such classifications must be considered as only provisional and subject to revision when the final cause of cancer is discovered." Every group of pathologists seems to have its own "Provisional" classification. If one gets a report from several pathologists on the same tissue he may be greatly perplexed to know whether they agree or disagree. Quite frequently they will positively disagree.

The following classification represents the basis of all classifications and is about as far as the average surgeon attempts to go:

A. Connective tissue tumors.

1. Normal adult cells.

(Fibromata, myomata, myxomata, lipomata osteomata, gleomata, neuromata, hemiangiomata, lymphangiomata.)

2. Immature connective tissue cells. Sarcoma. (Spindle cells, round cells, etc.)

B. Epithelial tumors.

1. Normal adult cells.

(Papillomata, moles, naevi, adenomata.)

2. Immature epithelial cells. (Carcinomata.)

C. Embryoid (complex or mixed), tumors.

1. A variety of tissues compose the tumor, in

many cases wholly different from the tissues normal to the region.

D. Cysts or cavities.

1. Developed from preexisting cavities.

2. Originate independently.

We heartily agree with Ewing when he says "the pathologist should endeavor to render a clinical diagnosis and not merely a histologic report. Hence all available data in the case are frequently required, and the investigation will often lead to the examination of the patient, and a consultation with the physician in charge." Surgeons who can give their patients the benefit of this kind of consultation service are, indeed, fortunate. The pathological laboratory would be of much greater service if it was always in possession of the history of the patient and the clinical data from the various examinations.

Considerable has been written about the prognostic value of certain laboratory observations. No doubt the pathological laboratory is able to give valuable aid in prognosis in a limited field, but it is a question whether we have arrived at a point where we can justly ask the patient to stake his hope of a cure on this data. "On this point" Ewing says,² "Important data may be obtained from a careful study of the gross specimen and of many sections from selected areas. Complete encapsulation is one of the most important good prognostic signs, while rupture of the capsule, spontaneous or traumatic, often transforms a comparatively good into a very unfavorable prognosis." This observation certainly presents a delicate point on which few surgeons would care to depend.

After reviewing the literature of cancer where do we find ourselves as far as the practical relation of practitioner and patient is concerned? When the patient with a wart, a mole, a chronic ulcer or a new growth presents himself for our advice how shall we proceed? Obviously our first duty is to determine whether the growth is benign or cancerous. To do this we must first have a distinct and comprehensive definition of the word "benign." Do we mean that as it appears and feels at the time of examination that it is "benign" for the time being or do we mean that we can assure the patient that it will always be benign? We have seen that perfectly innocent warts, moles, adenomata, myomata and

1. J. A. M. A., Jan. 3, 1925, page 1.

2. Locus citato.

ulcers in all localities have unexpectedly taken on new characteristics of growth.

There is one way in which histological and pathological studies have been of the utmost practical value in the treatment of cancer. Carcinoma arises from the epithelial cells. At first it is confined to a very limited area. The same is true in the origin of sarcoma from connective tissue. In its beginning the change from normal or quiescent cells is strictly local. It is confined to a limited area—to perhaps a very few cells. The practical lesson is that in every carcinoma or sarcoma there is a stage at which it is entirely local and can be completely excised or otherwise destroyed. The physician or surgeon who has not grasped the practical force of these facts and who is without imagination and suspicion is not competent to advise a patient with potential cancer.

There are undoubtedly several ways to proceed depending on the case in hand. We know that some localities are much more prone to cancer than others. That some ages are more likely to cancer than others. That sex, occupation, and habits seem to increase or diminish the possibility of cancerous change. But at best all of these are more or less in the range of speculation as far as the case before us is concerned. If we are fair with the patient we must admit two things. First that the only absolutely safe rule is to excise or otherwise destroy all such growths. This advice is based on the well known fact that all benign growths of whatever nature have been known to take on cancer characteristics. Further we have no sure way of knowing when such cell changes take place. Even Bloodgood admits, that at least two per cent. of chronic mastitis become cancerous. He might have added that he knew of no way to tell in advance which three of his 128 cases would constitute the three cancerous cases. It is a similar problem to the one we have in appendicitis. Most appendicitis operations are in realm of preventive medicine. It is a fair question whether the greatest safety of the patient with a growth is not found in the same surgical policy.

One method is to remove the growth and have it sectioned by a reliable pathologist. Even in this we have only increased the safety of the patient. We have, no doubt, all had the experience of finding what appeared to be a benign growth reported as positively cancerous.

While the advent of the "precancerous" in pathology has added a new aid to diagnosis in a limited range of cases, it has also increased our danger to error on account of the human factor in pathology. If the pathologist reports a given growth as positively "precancerous" our line of action is clear, but if we receive one of those involved and uncertain reports our line of action may be far from clear.

In order to establish a practical working basis for action in these cases, I have adopted the following classification:

- a. Positively benign.
- b. Probably benign.
- c. Potentially cancer.
- d. Precancerous.
- e. Cancer.

The adoption of some such analysis of our cases and following it closely will save many lives and much suffering. It is a curious anomaly of human nature that those "soft" hearted doctors who inveigh so loudly against what they are pleased to call the "unnecessary" and "mutilating" operations at the same time permit patients with potentially cancerous and precancerous lesions to go on to certain and horrible death because of improper advice at a time when it would prolong life and prevent suffering. This difference in attitude arises partly from a failure on the part of many members of the medical profession to understand the underlying principles of the cancer problem and partly from a feeling of hopelessness in the successful handling of cancer cases. Many otherwise good and conscientious doctors act toward these cases as though to tell a patient that he or she has a lesion which is "potentially cancerous" or "precancerous" is to condemn them to certain death or worse, a "mutilating" surgical operation. They seem to forget that "cancer" is itself the most "mutilating" and relentless of all conditions and that to allow a "potentially" cancerous or "precancerous" growth to become avowedly cancerous is one of the greatest stigmas on the medical profession today.

The following sentence is taken from one of the most recent and authoritative discussions of the cancer question: "It seems, indeed, extremely rare for a benign growth to alter its type and become malignant."² Such a statement

2. Johnson; Brit. J. of Surg. Apr., '25.

throws us into confusion and is unintentionally misleading. It makes no practical difference whether the cancer cell is always present in a wart, mole or tumor only awaiting the proper stimulus to awaken it into activity or whether the cells normal to the wart, mole or tumor are stimulated by unknown factors into an entirely new form of activity which we call cancer.

Many seem to overlook the essential fact that there was a time in every case of cancer when the growth was entirely local and could have been removed or destroyed with every hope of complete and lasting cure. In its final analysis the problem is one of acting while the growth is wholly localized. On this point Francis Carter Wood says: "When the classical picture of malignancy as described in the text-books can be fully demonstrated, the tumor is usually beyond operative attack."

The blame for this situation goes back of the individual doctor to the teaching in many of our medical schools. Too much time is devoted to the description and diagnosis of well developed cancer and oftentimes little or none to those lesions which are "potentially" cancerous or "precancerous." In a previous paper before this society I took occasion to show how, as an examiner in surgery for the Department of Registration and education for the state of Illinois, it was easy to demonstrate that only a small percentage of students from "A" grade schools had been taught anything regarding the "early diagnosis" of cancer. Early diagnosis must carry with it a definite understanding of those lesions which are recognized as potentially cancerous and the methods of detecting "precancerous" tissue. When dealing with any new growth, wart, mole or cyst or any obscure lesion which is interfering with function or nutrition, we should exercise a "justifiable suspicion" in the direction of possible or ultimate cancer development. This is especially true if the patient is between thirty-five and sixty years of age.

As soon as we thoroughly grasp the idea that "prevention" of cancer is our duty, the problem takes on a new aspect which is altogether hopeful where before it seemed hopeless. The purpose of this paper will have been achieved if more medical men can be led to adopt the policy of cancer prevention. It is a most hopeful field of service and will reward anyone who will conscientiously take it up. By this method many

lives, which will be lost by overlooking the potentially cancerous growths, will be spared the mental and physical torture of cancer.

DUSCUSSION

Dr. Henry Schmitz, Chicago: Dr. Black has presented a very timely paper on the important subject of cancer. He has dwelled mainly on the uncertainties of the etiology, the pathology and the diagnosis and finally suggested that an improvement in the results of treatment could be brought about by reforming the methods of teaching in the medical schools.

The direct cause of cancer will be discovered in the course of time. Very valuable work has been done by Carrel, Loeb, Warburg and others on the nature of the cancer cells. while Nuzum, Kammi and others have isolated a specific germ from human carcinoma with which they have reproduced typical carcinomata in animals. The growth of cancer depends on the loss of avidity of the bearer to the cancer. Abderhalden, Freund and Kammi have shown that the serum of cancer patients has probably lost the carcinolytic properties. Loss of avidity is perhaps caused by chronic irritations and inflammation, since cancer rarely attacks normal tissues and healthy organs. Clinical observations prove this, for example the chimney sweep's cancer of the scrotum; the aniline dye worker's cancer of the bladder; the tongue, jaw and buccal mucosa cancers of people with badly infected teeth, syphilitic lesions and ill-fitting plates; the male Jap's cancer of the esophagus, due to ingestion of very hot drinks and food; the manure eater's cancer of the stomach (using A. J. Ochsner's expression.)

The difficulties in the clinical and pathological diagnosis are many. However, the following proven axioms will lessen them:

1. The pathologist should always consider the clinical evidence with the histologic findings to render a decision.

2. The clinician should carefully weigh the physical signs and not the symptoms picture. If he delays the diagnosis until pain and cachexia appear, then the disease has progressed to a terminal stage. Such procrastination will always cost a human life. However, if we keep in mind the three cardinal signs: the tumor, the friability of tissue and the relation of the growth of the periphery, i. e., the board-like infiltration, the diagnosis of carcinoma should be rendered easy if the three signs are present.

3. Should the clinical evidence point to malignant disease and the microscope not corroborate the clinical diagnosis, then the patient should be given the benefit of the doubt and be treated as though he had cancer.

4. In the statistics such cases of carcinoma are classed, when diagnosed by the microscope, as carcinoma.

The indications for treatment are not based on the diagnosis but on the extent of the cancer disease.

Persistent inflammations and infections must be treated to prevent carcinoma. The localized carcinoma is eradicated by surgical procedures. Surgery should only be used if the surgeon can thus eradicate all the

cancer cells. In all other cases radium and x-rays give better results. In borderline cases radium and x-ray treatment may be followed with surgical excision, using preferably the cautery. Postoperative radiations should be used if the surgeon did or could not remove all of the cancer tissue. Terminal cases are treated symptomatically.

Finally Dr. Black hit the bull's-eye when he suggested the teaching of the "early diagnosis of cancer" to the medical student. If the teachers will utilize the suggestions made, improvement in diagnosis and treatment will be attained. We might suggest a yearly cancer day for the entire student body.

Let me summarize that the persistent irritations and infections must be removed; that the early diagnosis should be made from the signs; that the symptoms merely suggest a suspicion of the possible existence of cancer; that the treatment must be based on the extent of the disease; surgery is indicated in the clearly localized cancer and radium and x-rays in the inoperable cases.

Dr. W. F. Grinstead, Cairo: The subject is of such paramount importance to all of us that any practical suggestion that offers any assistance at all in combating this disease is desirable. Therefore, a paper like Dr. Black presented is desirable.

We have been told by Dr. Black and by Dr. Schmitz that cancer develops in the areas that are already pathologic. We have abundant evidence that chronic irritation plays a part. Now it has seemed to me wise, and it has been my procedure for many years, to get a careful detailed clinical history of these cases to begin with, then get a microscopic examination and compare the two. I get as much instruction from that plan as possible; but why let these moles or small tumors or warts remain in the patient because we do not know whether cancer will ever develop from them or not? To illustrate what I mean, an old lady of about 80 years came into my office this year with a deep black mole on her face as large as a finger nail. I could not say whether cancer had actually developed. I took a little ethyl chlorid and sprayed it on it; then took a sharp knife and just shaved it off flush with the healthy skin; then I took some acid nitrate of mercury, thoroughly soaked a pledget of cotton in it and applied it to the area. In the course of ten days to two weeks the little scab fell off. I believe she is perfectly cured because I have had many such cases that were cured. Why not give that treatment? Why not remove these conditions? It is not dangerous; it is not painful. Those are the two contraindications to surgical procedure—pain and danger.

Dr. Carl E. Black, Jacksonville (closing the discussion): I want to just take a moment to express two points: first, that the teaching in our medical schools has not been on the right lines regarding cancer; it ought to be revised and remodeled. Second, if we would deal with these precancerous lesions by radical treatment we would limit the progress of cancer and bring great credit to the medical profession.

SCARLET FEVER: ITS TREATMENT*

ARCHIBALD L. HOYNE, M. D.,
CHICAGO

In discussing the treatment of any disease, heed must often be given to certain etiologic factors. For even though these may not play an important role in the prognosis of the patient, still the course to be pursued respecting others, who have been subjected to the possibilities of infection, is sometimes vital.

Differences in susceptibility to scarlet fever have long been recognized. Moreover it has been shown that one member of a family who is not suffering from scarlet fever may harbor in his nose or especially in his throat, the identical type of streptococcus which can be isolated from one of his household who is a scarlet fever patient. Such instances as this suggest certain similarities between scarlet fever and diphtheria and attention has been directed to observations of a like character a number of times. Nevertheless, the question of how to determine who is and who is not susceptible to scarlet fever was not solved until the Dicks developed the test which bears their name.

Although the Dick test is a very simple procedure, yet there are definite fundamentals which are requisite in order to obtain correct conclusions. In the first place it is self evident that without the proper material, accuracy should not be expected. A 1/1000 solution of the specific hemolytic streptococcus toxin which has been standardized on a human being should be used. With such a preparation at hand 1/10 of one c.c. is injected intra-cutaneously. An ordinary tuberculin syringe fitted with a Summitt needle which is of very fine caliber completes the needed equipment. The anterior surface of the forearm offers a suitable location for the test. In brief, the entire technique is essentially that of the Schick test. If the reaction is positive, redness with slight induration may be noted at the end of 24 hours. A positive reaction indicates, of course, that the individual is susceptible to scarlet fever. There should be no constitutional disturbance. When the test is negative there is practically nothing abnormal to be observed at the point of injection and this indicates the person is in no danger from scarlet fever. It is

*Read by title at the Section of Medicine, Illinois State Medical Society, Quincy, May 20, 1925.

believed that the degree of intensity in a positive reaction serves as a barometer of one's lack of tolerance to the scarlet fever infection.

Zingher and others who have conducted large numbers of tests are most enthusiastic over the procedure. Although my own experience with this test is somewhat limited the observations made justify the faith which others have imposed in it. As an example, in two internes recently at the Cook County Contagious Disease Hospital one had a positive Dick test and one had a negative. Neither gave a history of having had scarlet fever. Both were caring for scarlet fever patients. The interne with the positive Dick test contracted scarlet fever, whereas his companion has remained free from the disease. In approximately fifty other instances where Dick tests were made, the results were equally reassuring. The present indications are that this test should prove as valuable in its relationship to scarlet fever as the Schick test has been in connection with diphtheria.

Age, as a limiting factor in scarlet fever, is often overestimated. Too frequently this disease is looked upon as one confined to children or at least as an infection which is but rarely seen in adults. Therefore, I believe it interesting to call attention to some of the age periods met with at the Municipal Contagious Disease Hospital during the past year.

Among 1,022 cases of scarlet fever admitted, 841 were children and 181 were classed as adults. Under the latter heading were placed all those who were more than 16 years of age. In other words, 82.3 per cent. were under 16 years and 17.7 per cent. were older.

At the time of admission 198 of the cases, nearly 18.5 per cent. of the total, were regarded as either severe or critical, the remainder being of a mild or average type. Among these 198 cases, 86 were males and 112 females, and there was but one patient in this group who was less than a year old. The following table shows the age periods for these severe cases:

TABLE 1

Age and Sex in 198 Severe Cases of Scarlet Fever.		1-5		6-10		11-15		16-25		Over 25	
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1	24	29	26	42	18	17	19	14	8	9	

It is suggested by the figures presented that scarlet fever occurring under one year of age is a rarity. It will also be noted that slightly more than 20 per cent. of the severe cases occurred in patients over 16 years of age.

Prophylactic measures. Since the nose and throat are the most vulnerable points for infection, special precautions should be taken by those who are necessarily brought in contact with known cases of scarlet fever not to accept any avoidable hazards. The constant rule of washing the hands thoroughly after each contact with a scarlet fever patient or with contaminated articles and keeping the hands away from one's face will do much to mitigate the chances of transmitting the infection to either one's self or to others. Nor should the possibility of acquiring scarlet fever from a surgical case be too lightly regarded. In a number of instances I have seen nurses who contracted scarlet fever from their charges that were suffering from streptococcus infected fingers or hands. Therefore, surgical conditions as an etiologic factor in the transmission of scarlet fever should, under some circumstances, receive consideration.

A number of years ago (1905) Gabritchewsky offered a means of active immunization against scarlet fever by use of a vaccine prepared from cultures obtained from scarlet fever patients. Considerable success was claimed for this method though it has never attained a high degree of popular favor.

The Dicks contend that any immunizing power which Gabritchewsky's vaccine possesses is due to the small amount of toxin which has not been destroyed in its preparation. With the scarlet fever toxin of the Dicks much more certain immunity should be expected though I think sufficient time has not yet elapsed in order to determine for how long a period such an established immunity may endure.

Immediate immunity, passive immunity, may now be undertaken by the administration of 5 c.c. of Dicks concentrated scarlet fever antitoxin, which is the same preparation advised for therapeutic purposes. Dochez's serum may be used in a like manner.

General management of patient. Possibly it is superfluous to state that strict isolation of a scarlet fever patient is one of the greatest essentials. The same precautions should be taken with a patient of this character as would be adopted with a surgical case in an operating room. The only difference in this respect is that everything should be sterilized or disinfected after coming in contact with the patient instead

of before. Scarlet fever is not air-borne; it is a contact infection.

Diet. This is a subject concerning which there is a great variance of opinion. For many years, at the Cook County Contagious Disease Hospital, the chief diet for scarlet fever patients consisted of milk. During that period nephritis was frequent, possibly the principal complication. There was usually one ward, and sometimes two, reserved for the nephritis cases which comprised all degrees of severity. About ten years ago, however, it was decided that possibly a diet consisting chiefly of milk cast too heavy a protein burden upon the kidneys and thus increased the likelihood of nephritis. Therefore, the system of feeding was changed and the aim was to give little rather than much milk, substituting fruit juices and vegetables.

During the first year the new diet was in effect there was a reduction of approximately 70 per cent. in the number of nephritics. In other words, nephritis, in importance, passed from the head to the bottom of the list as a frequent complication of scarlet fever. At both the Cook County Contagious Disease Hospital and also at the Municipal Contagious Disease Hospital it is one of the rarest complications met with in this disease.

Ordinarily, during the first three days of scarlet fever, the diet should be liquid consisting of fruit juices, vegetable soups prepared without the use of beef, gruels, some milk and plenty of water. If there is no special contra-indication to doing so, the average patient may be placed on a soft diet by the fourth day. This should be made up largely of fresh fruits, fruit juices and vegetables, allowing some milk if desired. Usually the patient may continue on this fare for from three to four weeks, adding to it from time to time, practically everything but meat and eggs. If the kidneys are normal by the end of the fourth week the diet may then be unrestricted though an occasional urinalysis should be made during the following two months.

Rest. Oftentimes the question arises as to how long a patient should be kept in bed. If there is no obvious reason for doing otherwise, ten days is usually sufficient. However, if the patient is not under the supervision of a nurse or attendant who will guard against drafts, a more prolonged bed period is preferable. Hospital patients, when children, are often more

easily cared for as bed patients than when ambulant. Furthermore, the likelihood of cross infections is less, since, as bed patients, the possibility of contact is practically eliminated.

Serum Treatment. In the mild or even the average case of scarlet fever, frequently nothing more need be done than what has already been referred to. Drugs can scarcely be considered as a factor in the treatment of such cases, though the so-called alkalinization of the patient is sometimes followed. Ten or fifteen grains of sodium citrate four times a day will do no harm and is often thought to be beneficial. Sponging for high temperature is, in my opinion, seldom advisable for scarlet fever patients.

On the other hand, no physician should ever feel content with his treatment of a severe case of scarlet fever unless he has afforded his patient any possible benefit which may be derived from the administration of one of the serums now available.

Convalescent scarlet fever serum, if obtained from suitable donors, seems to be the ideal remedy for treatment but unfortunately it is seldom possible for the average physician to procure it. In fact, there are times when even a large contagious disease hospital cannot fulfill its own needs in this respect.

Convalescent scarlet fever serum may be obtained by withdrawing from 250 c.c. to 500 c.c. of blood from sturdy adults who have shown a negative Wassermann. Blood from children could, of course, be used, but in the hospitals with which I am associated it is the practice to limit blood letting to those who are of age. The blood is ordinarily taken during the third week of the donor's disease. All surgical technique must, of course, be carried out under the strictest aseptic precautions and the blood collected in a sterile flask. This should be placed in an ice box and the serum can be pipetted off the following day. Sometimes it is advisable to use the whole blood.

In the administration of convalescent serum from 25 c.c. to 100 c.c. should be injected intramuscularly, the outer muscles of thigh usually offering a good site for this purpose. 25 c.c. to 50 c.c. is the average dose for a severe case of scarlet fever and improvement in the general symptoms is often noticeable within two to three hours. Frequently, scarlet fever patients entering contagious disease hospitals with tempera-

tures range from 104° upward have displayed either normal or approximately normal temperatures within twenty-four hours after receiving treatment with convalescent serum.

Several years ago Weaver reported a series of cases treated with convalescent serum. The results he secured were most impressive.

Anti-streptococcus serums have been on the market for many years but in my own experience only a pessimistic view could be formed regarding their usefulness. More recently, however, Dochez of New York has developed a serum which he calls scarlet fever streptococcus antitoxin. This is marketed for treatment in doses varying from 20 c.c. to 50 c.c., according to the producer. Its preparation is brought about by first injecting liquid agar into the subcutaneous tissue of a horse's neck. After the agar has solidified, living cultures of the specific streptococcus of scarlet fever are injected into the agar mass. By this means immunization of the animal is brought about and later the horse is bled and the serum obtained. Claim is made that this serum is both antitoxic and anti-bactericidal.

Blake, Trask and Lynch of New York affirm that Dochez's serum possesses neutralizing properties equal to that of convalescent serum.

In fifteen cases of scarlet fever receiving Dochez's serum, which have come under my own observation, there was no doubt in my mind concerning the merits of this remedy. Moser's serum for the treatment of scarlet fever was a preparation similar to Dochez's and although it was brought to the attention of the medical profession about 23 years ago, it has never received general recognition as a valuable asset in scarlet fever treatment.

Dick's scarlet fever antitoxin (concentrated) is a thoroughly scientific product. Its preparation is accomplished in practically the same manner as diphtheria antitoxin. In other words, the serum is obtained from a horse which has been immunized by injecting the specific scarlet fever toxin. The pseudo-globulins which hold nearly all the antitoxin are extracted from the immune serum and placed in a solution of normal salt. Twenty c.c. of this is designated one therapeutic dose.

In 35 patients treated with the Dick serum improvement in the general condition was usually noticeable within twelve hours. In many

instances the patients themselves commented on the fact that they felt better two or three hours after the injection was made.

It is claimed that if the Dick serum is administered early in the disease, complications are, to a large extent, averted. Although in my series, which were observed at the Municipal Contagious Disease Hospital and at the Cook County Contagious Disease Hospital, few complications actually occurred after the serum was given, I do not feel that a sufficient number of patients has been treated by me with the Dick serum to establish this fact on the basis of my own experience.

Following is a table showing some of the results in serum treated cases:

TABLE 2
SERUM TREATED PATIENTS

Serum Used	Number of Cases	Range in Ages	Average Day of Disease	Average Dose of Serum	Average Decline in Temperature Within 24 Hrs.
Dick Antitoxin.....	35	2-28 years	5½	20 c.c.	1.3°
Dochez Streptococcus Antitox.....	12	2-26 years	4	20 c.c.	.5°
Human Convalescent Serum	12	2-27 years	8	33 c.c.	.7°

Note.—The Dick serum is concentrated.

The Dochez serum used was the unconcentrated.

There were two deaths among serum treated cases but since they each received more than one kind of serum no comparisons can be drawn.

The most satisfactory results may be expected when the serum is administered within the first three days of the disease.

In dealing with the complications of scarlet fever the possibility of a diphtheritic infection must always be kept in mind. Profuse nasal discharges should always suggest diphtheria and a membrane of any character in the oral passages should be regarded as diphtheria and treated as diphtheria without waiting for a laboratory confirmation.

Cervical adenitis—when seen early, ice should be applied. This will usually check the inflammatory process and suppuration will generally be avoided. Heat should be resorted to only when it is apparent that a breaking down of the gland is inevitable or when the condition has become chronic.

Otitis media—throat, nose and ears should not be irrigated. This practice was resorted to for a number of years at the Cook County Con-

tagious Disease Hospital. When it was stopped in 1915 there was a decline of approximately 60 per cent. in the number of cases of otitis media. Syringing of ears in the early acute stage of otitis media frequently results in harm. Sterile applicators may be used for removing any accumulations. Sometimes it is also desirable to use a 15 to 20 per cent. solution of argyrol by means of applicators. If a thick suppurating discharge develops later the question of irrigations or syringing may be considered. By adhering to this plan fewer mastoid operations will be necessary.

Mastoiditis—with first indication of mastoid tenderness ice bag should be applied and kept on continuously for two or three days if necessary.

Arthritis in scarlet fever, when occurring, develops most frequently between the seventh and tenth day. Suppuration rarely takes place. Ordinarily the treatment is practically that of an articular rheumatism; immobilization and some form of salicylates internally and locally.

Endocarditis so frequently feared is not often diagnosed. Pericarditis, pneumonia and empyema are occasionally met with.

In terminating quarantine for a scarlet fever patient a difficult problem is often presented. How can we know that the patient is no longer a source of danger to others? In this connection it is interesting to learn that among 1,024 patients at the Municipal Contagious Disease Hospital in Chicago blood agar plates taken on the 26th to 27th days of the patient's disease showed that 639 harbored a hemolytic streptococcus in the throat. About half of that number, or 314, gave positive nose cultures for a hemolytic streptococcus also. From these figures, as might be expected, it is apparent that the streptococcus is much more likely to persist in the throat than in the nose. Defective tonsils may offer an explanation for this. Furthermore, may not such patients transmit scarlet fever to others if brought into close contact with them? The time will probably come when no arbitrary period of quarantine for scarlet fever will be adhered to. Instead, patients will be released only in accordance with negative laboratory findings when culture plates for the hemolytic streptococcus have been examined.

As evidence of the success which has attended the lines of treatment mentioned, I wish to point

out briefly a few noteworthy achievements at the Municipal Contagious Disease Hospital in the year 1924. Among the 1,022 cases of scarlet fever admitted the mortality was but 0.7 per cent. There was not a single mastoid operation. Nephritis was extremely rare.

25 E. Washington St.

EPIDEMIC OF TYPHOID FEVER PROBABLY DUE TO INFECTED OYSTERS.*

C. T. ROOME, M. D.,
EVANSTON, ILL.

Early in November, 1923, there started an epidemic of typhoid fever in Evanston and in towns immediately adjacent to the North after a comparative freedom from this disease for a number of years.

Up to about thirteen years ago, the typhoid rate in Evanston was high, due very largely to contaminated Lake water. In 1912, hypochlorite of lime was added to the drinking water, and in July, 1914, the new filtration plant was completed. Since then with the addition of one to three parts per million of "Hypo" or "Chlorine" our water, from analyses at three different places, keeps almost sterile. The number of cases occurring in Evanston during the last thirteen years is as follows:

Year	Cases	Year	Cases
1911	99	1917	2
1912	64	1918	5
1913	30	1919	8
1914	12	1920	4
1915	7	1921	1
1916	0	1922	2

The majority of these cases since 1914 have been cases contracted outside of the City.

In 1912, we had an epidemic of about 50 cases of typhoid fever due to infected milk sold by a farmer to a dairy supplying a special brand of baby milk. Since the passing of a comprehensive milk ordinance in 1915, together with a careful examination of all brands of milk and cream at frequent intervals and a systematic survey of farms and bottling plants, we have had no reason to suspect our milk supply.

The epidemic in question developed almost simultaneously along the North Shore towns, the onset of symptoms ranging from Nov. 2 to 28, inclusive, 1923, one or two of the latter cases

*Read before the Section on Public Health and Hygiene, Illinois State Medical Society, Quincy, May 19, 1925.

being from contact. When the first four or five cases were discovered, it was possible to attribute them to an out-of-town infection inasmuch as they all showed histories of having been away. It was not, however, possible to get a definite clue until the finding of a case in a man, Mr. M., who dealt in fish and oysters. A careful investigation of this man's business showed that he obtained his oysters in Chicago from two main dealers who had them shipped in car-load lots which came largely at this time from the Maryland region. They were bulk oysters in sealed gallon tins which were delivered unbroken to individual markets and grocery stores all the way from 47th Street, Chicago, up to Highland Park. Mr. M's books were gone over and a list of all of his customers obtained as well as the origin of the shipments distributed to local stores at the possible time of the infection—which would be the last half of October.

At the time of the report of Mr. M's case there had been five cases reported in Evanston and about an equal number in towns immediately adjacent on the North. Through the co-operation of the health authorities of these towns—inasmuch as their cases developed about the same time—it was deemed probable that there might be a common source of infection. It was found that every case, within the incubation period, showed a history of having eaten raw oysters which had been obtained from local stores or markets supplied by this one dealer and by him only. There was absolutely nothing else in common with all cases. The first theory that suggested itself was the possibility that this dealer had infected certain cans inasmuch as there was always a certain amount of liquor or water on the covers of the cans, but a very careful investigation of his case showed definitely, from the time of the onset, that this could not have been the method. Samples of oysters taken from various cans showed no typhoid bacilli present, but the colon count was high, ranging from 60 to 1000.

The matter was immediately taken up with the State Department of Public Health and also the Chicago office of the Bureau of Chemistry, U. S. Department of Agriculture. The latter immediately took the matter up with the Eastern representatives to find out the typhoid situation in the Maryland district where these oysters most probably came from.

In rapid succession there was a total of 32 cases all reported in this neighborhood, every one of whom—with the exception of the fish dealer himself—gave a history of having eaten, within the incubation period, bulk oysters obtained from local markets supplied by this one company. No other common possible source of infection was discovered. The epidemiological investigation of these cases was carried out not only by the local authorities, but also by investigators of the State Department of Public Health. The age of the patients ranged from ten to sixty-four years and occurred largely among the average class of people who were not in the habit of going out to restaurants to eat.

It was learned at this time that there was an increase in typhoid in the town of Oak Park, Ill. Seven cases in all, five of whom gave a history of having eaten raw oysters that came from this same district.

The exact source of the oysters under suspicion could not be definitely determined inasmuch as the local dealer obtained his supply from two different wholesalers. But the typhoid situation in and around Chrisfield, Md., where the bulk of their oysters came from, was such as to cast suspicion on oysters coming from that neighborhood. The official report of the Chicago office of the Bureau of Chemistry stated that not only were the sanitary conditions in and around the shucking plants in this neighborhood very poor, but that there had been 90 cases of typhoid fever reported to date in that county that year. In addition to the reported cases, there were at Chrisfield proper three suspects under the care of a negro physician and were most probably genuine typhoid fever cases. It also goes on to state that any considerable body of adults in that section of Maryland would show some 10 per cent. as having had typhoid fever sometime in their lives. There were, working in the Chrisfield plants at the time some 1,200 to 1,500 oyster shuckers, skimmers and others whose hands came directly in contact with the shucked oysters. They concluded, therefore, that at least some 150 of those workers had had typhoid fever and probably a greater number, since the workers are largely colored and the percentage of infection among them is greater than that of the general population. Inspector Jones also advised that the experience of his Department has shown that three per cent. of all persons having had

typhoid fever are actual chronic carriers of the disease. Therefore, there is the possibility of four or five carriers working in the Chrisfield plants and coming directly in contact with the oysters.

Conclusions:

1. Suspicion pointed to shucked oysters distributed by the dealer M. as the causative agent in this outbreak, because:

- a. Water supply checked and found safe.
- b. Milk supply checked and found safe.
- c. All other sources of food—common to these cases—checked and excluded as possible factors.

2. Undoubtedly oysters—eaten raw—are a possible menace as typhoid carriers, if not produced and handled under proper sanitary conditions.

3. Oysters, providing a good medium for bacterial growth, should be as carefully guarded as raw milk, and every safeguard should be thrown around oyster beds and handlers to prevent contamination.

DISCUSSION

Dr. S. S. Winner, Chicago: There is one point that I would like to emphasize in connection with Dr. Roome's paper, and that point was forcibly brought to my attention when I worked with Dr. Roome in the epidemic that he has described. Since water and milk have practically been eliminated as typhoid carriers in the last few years, we are beginning to see that other factors are responsible for a certain number of typhoid cases. Now about this oyster outbreak that Dr. Roome described. He was fairly well convinced at the time, after going over the case, that the epidemiology pointed very strongly to oysters as a possible source of the outbreak. At that time Dr. Roome and other health commissioners of north shore towns, after we had consulted about the matter, issued an order banning the sale of oysters in those communities, and the typhoid cleared up. We did not know very much about oysters in the State of Illinois as to their production and handling. Later we learned more about them and were more convinced in the light of later facts that oysters were a menace. About a year later we were faced with a similar condition—an outbreak that was traced to oysters excluding all other sources, and the State Department of Health of Illinois took steps at that time to assure and safeguard the raw product. As a result of the Department of Health's action, which took the leadership in the matter, the oyster dealers and growers of the United States, the U. S. Public Health Service, the Department of Fisheries and the Department of Agriculture of the United States got together and formulated rules and regulations to safeguard the handling

and packing of the raw product. And it is due to the State of Illinois that the other states followed this example and insisted that the oyster be made safe, as a raw food handed to the consumer; that the same precautions should apply to oysters as to milk. I want to say that Illinois was in the foreground and the deliberations of the Illinois Departments and the rules they had formulated were accepted in toto at Washington by all the Departments interested. They felt that if we were justified in putting the ban on all oysters, that the oyster industry itself needed safeguarding, just as other foodstuffs consumed raw. Another point was the sudden drop of typhoid in Evanston and surrounding territory after the chlorinization of water was ordered. It was a very material check, practically eliminating typhoid from North Shore towns.

Dr. I. D. Rawlings, Director of Public Health, Springfield: I was very much interested in this paper, and especially interested in seeing the very thorough manner in which the city of Evanston worked out their very speedy determination of the source of that epidemic reported today. I think one point to be stressed is that not only the raw bulk oysters but also the shell oysters may be a menace, as has been found in a large number of cases occurring in New York, and in this state, which were traced directly to shell oysters, so that there is not only a menace in bulk oysters but shell oysters as well. There was a report that Park of New York had said the typhoid germ could not live in the shell oyster. Other experiments have been carried out, however, since then, and it is reported by the Department of Public Health that the same germ is found for weeks afterward. So we know now that they can live, and thrive to a certain extent, in the shell oyster. In 1915 the State Board of Health investigated an epidemic thought to be due to bulk oysters eaten raw, and that was traced back to supplies obtained from the Tilghman's Island, and there were actual cases of typhoid found among the employes who shucked the oysters and handled them there. The less handling there is of oysters the better. In the process of delivering them to the consumer there is a temptation for the middleman to handle them. He often buys them in five gallon cans and puts them in quart cans. He has been accused of watering them. There will be a time when oysters are put up in original packages and certified by the State Department of Maryland, or wherever it is they come from. And if they are delivered in that form, even if they cost five cents more, it is worth it to the consumer, who is in that case not running the risk of typhoid which is so manifest when they are carelessly handled and packed.

Dr. John Dill Robertson, Chicago: I desire to publicly apologize to Dr. Roome for not agreeing with him at a meeting of a group of health officers in the Sherman Hotel at the time this epidemic occurred. While I was not the Commissioner of Health at that time, the Chicago Department of Health had taken the position that the epidemic reported by Dr. Roome was not an oyster-borne one. Dr. Roome insisted that

the evidence he had, proved that it was, and he stood fast by his guns. However, the epidemic passed, and no preventive measures were taken until a year later, when the City of Chicago was visited with another typhoid epidemic. The oysters again came under suspicion, Dr. Roome still maintaining the same position, claiming it was due to oyster infection, and he took the position that he was as much interested in Chicago citizens as he was in Evanston citizens, because so many of Evanston's citizens commuted to Chicago daily. It was through Dr. Roome's persistence that we were all brought around to the truth. I believe that in the future we can look back to the oyster season of 1924-25 as the time when a determined movement was started to make this very desirable food absolutely safe for consumption. I think I am safe in making this prediction, for Dr. I. D. Rawlings, Director of Health, acted vigorously and did a very unusual and very courageous thing by placing an embargo on the consumption of raw oysters in the State of Illinois during our most recent typhoid epidemic. That act took courage. The oyster growing states were immediately up in arms and reprisals were threatened. The Governors of the states took a very active part in this fight and declared that the oysters were absolutely safe for consumption and that Illinois had done wrong by preventing consumption of the raw oyster, but Dr. Rawlings stood fast until the great oyster producers came to Springfield and agreed upon a clean-up program, which was later adopted at a national conference called by Surgeon General Cummings in his offices in Washington. This conference was attended by about twenty state health directors and over one hundred others interested in oyster production and distribution. This conference approved of the program made in Springfield, and practically adopted it as their own. This conference appointed a committee to call upon the Director of the National Budget, who succeeded in having Congress respond immediately, with the result that \$83,000 was appropriated to carry out the plan worked out in the Springfield and Washington conferences.

I believe that the sterilization of the oyster will eventually take the same course as does that of milk. Health officers found that they could not have clean bulk milk. They found that the only really safe method was to pasteurize it and immediately place it in an original package, and it is my prediction they will have to do that very thing with oysters before we can approach a uniformly safe oyster. Chlorination is very much talked of now as a practical method that may do for the oyster what pasteurization does for the milk.

In closing I want to repeat, that due credit should go to the health officer, Dr. Roome, in Evanston, who fought for his conviction and proved that he was right.

Dr. C. T. Roome, Evanston. (Closing.)—I wish to thank all the gentlemen who discussed my paper. Particularly I want to thank Dr. Robertson for what he has said about that famous battle. I have nothing more to add.

TONSILLECTOMY NEW ASEPTIC METHOD OF CONTROLLING HEMORRHAGE*

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The dangers of hemorrhage from tonsillectomy have been recognized from the earliest days of tonsil operations. Today, with the general practice of complete removal of the tonsil, these dangers are accentuated. Numerous methods to control such hemorrhages have been used. The merits or demerits of the different methods will not be discussed; but the general principles followed may be mentioned:

- (a) Pressure, by means of sponges or clamps.
- (b) Styptics, local and general.
- (c) Sedatives.
- (d) Coagulants, locally, hypodermically, intravenously, by mouth.
- (e) Thermo-cautery.
- (f) Sutures.
- (g) Ligatures.
- (h) Suture-ligatures.

Any and all of these measures have been and still are useful. At the present time men who do much tonsil surgery consider ligation of the bleeding vessels by some method the most efficient means of controlling hemorrhage after tonsillectomy.

Many different instruments and techniques have been devised for this work.

No matter what technique is used, tying vessels in the tonsillar fossae is difficult, requiring training and ability.

This technique of placing suture-ligatures around the bleeding vessels after tonsillectomies was evolved in the course of some experimenting with suturing the tonsillar fossae, of which latter a brief report also will be given in this paper.

The technique is as follows:

Tongue depressed, anterior pillar retracted, the fossa is sponged with small gauze sponges till the bleeding points can be located and seized with artery forceps. Sometimes it may be necessary to clamp several bleeding points with hemostats before beginning to apply the sutures. The instruments used are the author's special tonsil

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needles, right and left, hook, and tying forceps. (Figs. 1 and 6.) The suture material is number 0 or number 1 plain catgut. Having clamped the vessel, slight traction medianward is made with the hemostat, lifting a small cone of tissue. In the centre of this cone is the vessel, and its apex is held by the forceps. The ligature is now placed near its base (Fig. 2) in such way that it includes the vessel in the concavity of a

with a pair of forceps (Fig. 4, a, 1) and held, while the operator draws the other end through with the hook. (Fig. 4, a, 2). With the tying forceps a double twist knot is made (Fig. 4, b, 1 and 2) and pushed down with the notch in the end of the forceps. (Fig. 5, a.) The hemostat is removed. The knot is tightened by grasping one strand with the forceps close to the knot and making traction in one direction, while

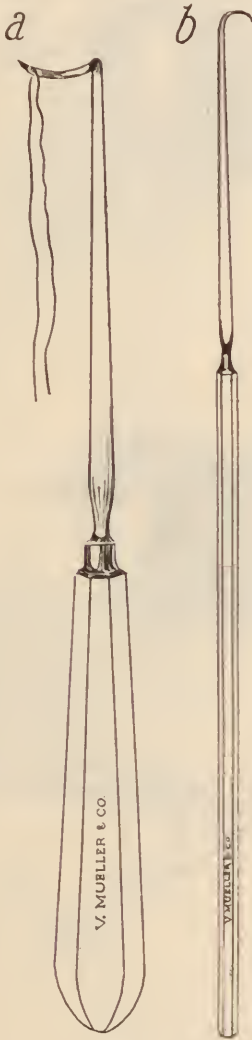


Fig. 1.

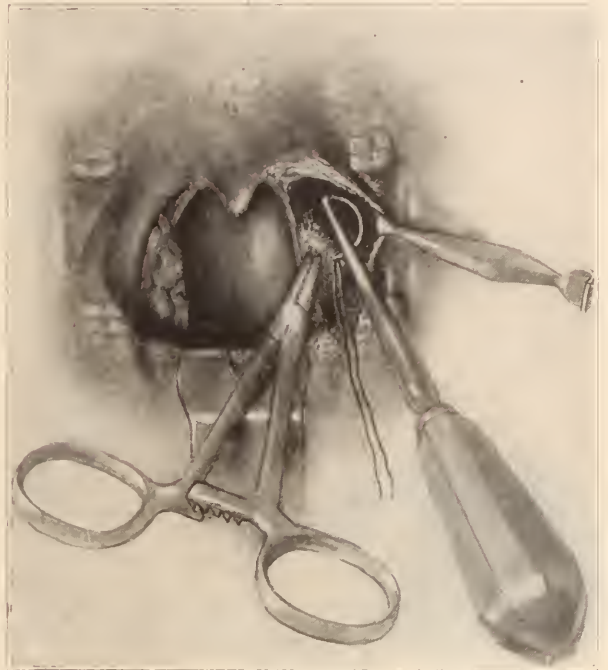


Fig. 2.

half circle. (Fig. 3, b.) If the needle is to circle underneath the forceps, the points of its entrance and emergence should be slightly above the forceps (Fig. 1); and the reverse if the needle is passed above the forceps. The needle having emerged from the tissue at the proper point, the thread is caught with the hook (Fig. 3, a) and held on it, while the needle with a reverse motion, is withdrawn from the tissues and pulled clear of the thread. (Fig. 3, b.) One end of the thread is now caught by the assistant

traction in the opposite direction is made by the assistant holding the other strand. (Fig. 5, b, 1 and 2.) A single twist knot, twisted in reverse direction, is superimposed on the first, and drawn tight, making a secure surgical knot. All bleeding points are located and tied in this way until the fossa is perfectly dry. Since adopting this method, which has been used in a fairly large number of cases, only one patient has had to be attended for hemorrhage after leaving the operating room.

After four years of experience with suturing the fossae tonsillaris after tonsillectomy, under both local and general anesthesia, in 213 patients, in all, some facts in regard to the effects and final results of this method may, perhaps, be of some interest. Three interrupted sutures, rarely four or more, of catgut or silk, were placed on each side. Beginning above, the needle was passed from behind through the posterior pillar,

beneath the fascial floor of the fossa and through the anterior pillar. The sutures were then tied, taking care not to draw them too tight, to allow for some swelling of the tissues. If these sutures were placed right, bleeding was always effectually controlled. Where silk was used, the stitches were removed on the first or second day after the operation.

Of these 213 patients, 8 were operated on by others; 167 of the operations were performed under local and 38 under general anesthesia; 185 of the patients were dismissed from the hos-

throat were extremely soft and relaxed. The swelling and crepitus, however, had completely disappeared, without sequelae, on the seventh day after the operation.

In one patient a stitch abscess developed, which cleared up in a few days.

Considerable sloughing occurred in two instances, evidently due to the sutures cutting

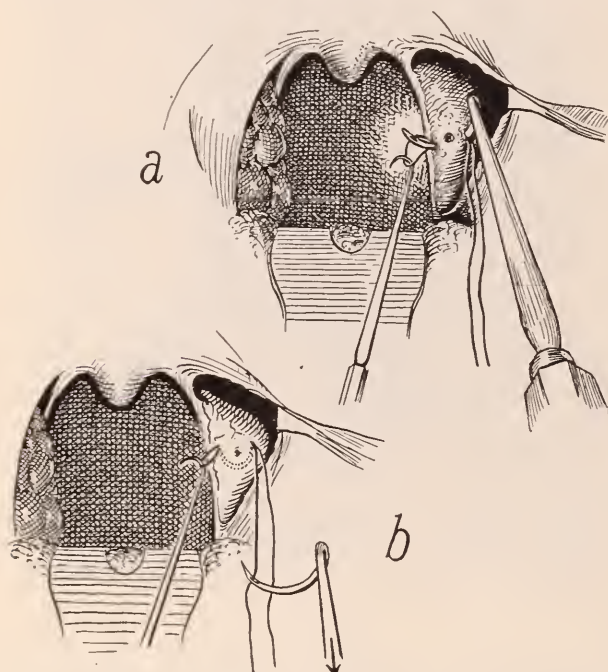


Fig. 3.

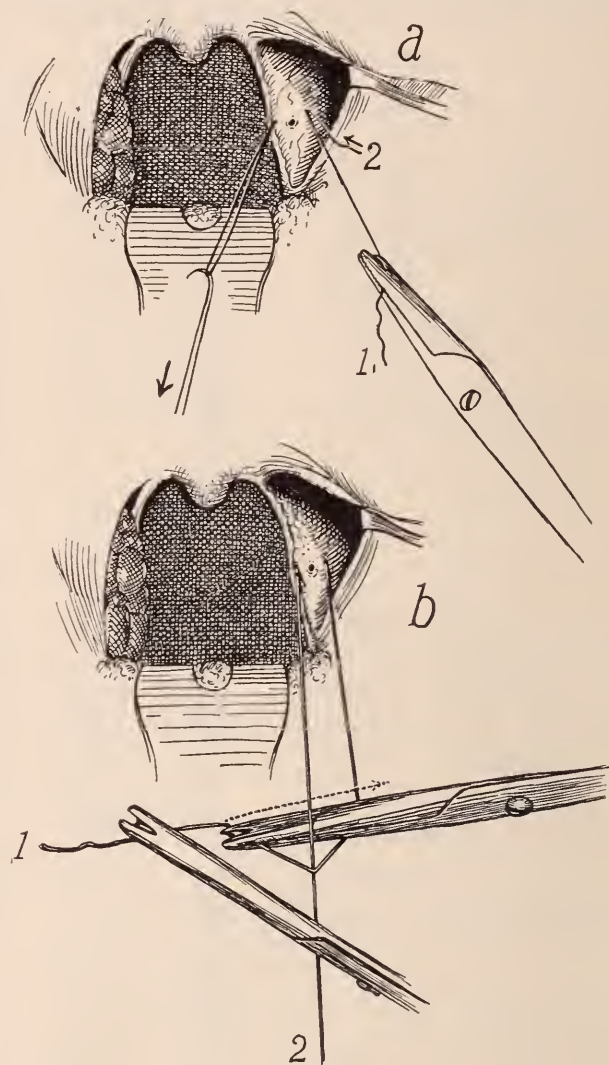


Fig. 4.

pital on the day after the operation; 19 on the second and one on the third day.

Five of these patients complained of intensely sore throat while the stitches were in situ. In each of three patients one of the stitches came untied and had to be replaced because of recurrent hemorrhage. In two patients there was considerable extravasation into the tissues of the palate. This was resorbed, though rather slowly, without sequelae.

Very pronounced edema of the uvula occurred in 9 of the patients.

Emphysema of the right cheek developed in one patient, but not until about four hours after the operation. It was not clear what caused it, but one peculiarity about this patient was distinctly noticed during the operation; namely, that the tissues about the tonsillar region of the

deeply into the tissues on account of excessive swelling. The final result was good, though healing was delayed.

In two patients bleeding below the lowest stitch occurred some time after the operation, which was controlled by additional sutures.

Post operative hemorrhage, occurring in one patient, from a tear in the posterior pillar, caused by one of the stitches, was controlled by cauterization.

In 8 patients in whom suturing was not done,

postoperative hemorrhage occurred from two hours to six days after the operation. Unsuccessful attempts were made to control the hemorrhage by other means. (Pressure, sponges, clamps, styptics.) Suturing the fossae controlled the bleeding perfectly and permanently.

While suturing the tonsillar fossae is effective, and under certain conditions a method par excellence, of controlling bleeding after tonsillectomy, it has some drawbacks, which caused

ing the throat may cause the stitches to break or open and bleeding to recur.

Where the tonsillar pillars are poorly developed and the fossae tonsillaris wide, it is often impossible to draw the pillars together without tearing, especially at the lower ends. Bleeding may result from such tears.

Because of swelling the sutures may cut

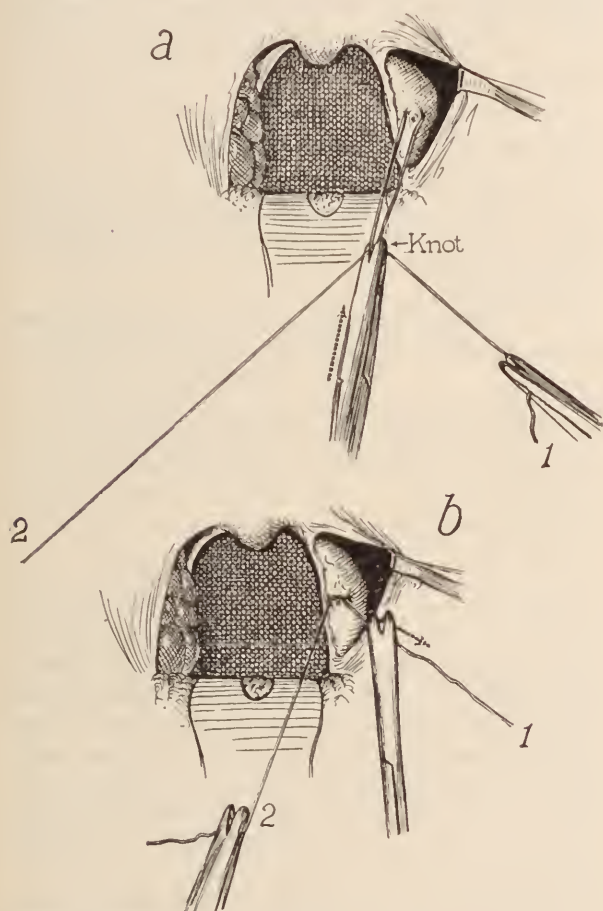


Fig. 5.

me to abandon this method, at least as a routine procedure, for the one previously described, which is superior.

Some of these drawbacks may be mentioned: As a general rule these patients complain of greater discomfort in the throat before the stitches are removed or absorbed.

There is undoubtedly a greater tendency to edema of the palate and uvula where the fossae are sutured. If the floor of the fosa is not included in the sutures, a space is left into which bleeding may take place with serious consequences. Violent straining, coughing or clear-

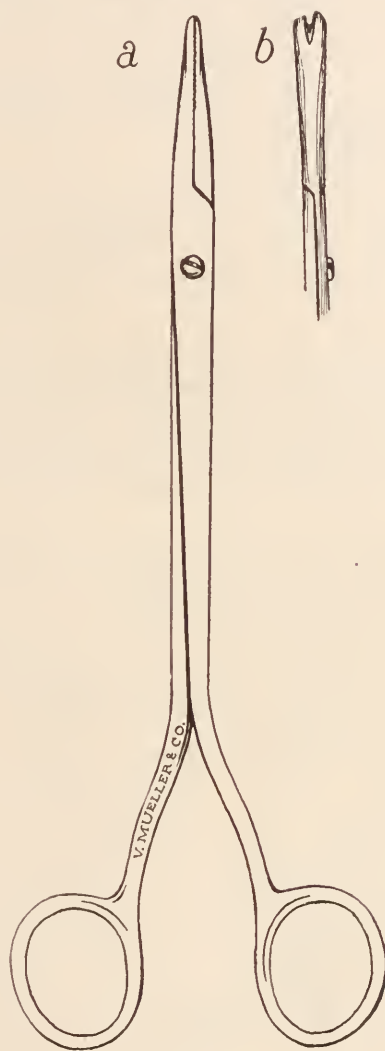


Fig. 6.

deeply into the tissues and cause sloughing and scars.

To gain information about the final results questionnaires were mailed to 100 of these patients, after six months or more had elapsed after the operation. Only 47 replied.

The questions referred to the sensory conditions of the throat; the effects on the voice; the hearing, deglutition; the motility of the palatal muscles and mandible; local conditions of complaint, and the patient's general health. The ages of those who answered the questionnaire

or for whom it was answered, were from 3 to 67 years. Twenty-three were males and 24 females. None reported unfavorable change in the voice. Three reported it improved (clearer). In no case was the hearing affected adversely. Several reported improvement where the hearing had been previously impaired.

Relative to deglutition there were no untoward effects.

There were no reports of abnormal sensations, constrictions, pain or impaired mobility, that had not cleared up.

As to the length of time after the operation before these patients could swallow solid food comfortably, there was considerable variation, ranging from 2 to 28 days. The average was 9 days.

A considerable percentage, 15 out of the 47, experienced more or less stiffness of the jaw, lasting on the average from 2 to 4 days, but in 2 cases for 4 weeks, and in one case for 6 weeks. In no case was there permanent impairment of motility.

Among the various conditions for which these patients were operated on were:

- Catarrhal and suppurative otitides media.
- Chronic tonsillitis.
- Repeated attacks of acute tonsillitis.
- Chronic laryngitis.
- Cough.
- Pruritis.
- Rheumatism.
- Defective hearing.
- Tinnitus aurium.
- General weakness.
- Stomach trouble.
- Leptothrix of the tonsils.
- Nasal trouble.
- Nervousness.
- Choking sensations.
- Hyperesthetic rhinitis.
- Diphtheria carriers.
- Headache.

As to the effects on local conditons, 41 reported improvement and 6 no improvement. Thirty-six of the patients reported improvement in their general health and 11 that their general condition was unaffected. Thirty-four had experienced improvement in both local and general conditions, and 7 in local only. Two had benefited generally but not locally.

In all these cases the final results, as far as concerned local conditions in the throat, were satisfactory. Whatever untoward effects were noticed were only of a temporary nature.

The results in the aforementioned cases were all that could have been obtained with any other method of operation.

In conclusion these points might be emphasized:

1. With the author's special instruments, suture-ligatures can be placed quickly, accurately and aseptically around bleeding vessels in the tonsillar fossae.

2. The ligatures, being anchored in the tissues, will not slip off when tying.

3. The thread being passed in a semi-circle around the vessel, the hemostat can be removed before tying and the vessel still be included in the ligature.

4. Straining, coughing or violent movements of the muscles of the throat will not dislodge the ligatures.

5. The method has proven very effective in controlling hemorrhage in patients in which it has been used.

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DISCUSSION (ABSTRACT)

Dr. J. H. Roth, Kankakee: Most of the men who get their training at the Eye and Ear Infirmary learn the Boettscher technique, and in that technique hemorrhage was controlled by special ligatures after the method described by Dr. Nothenberg. Occasionally however in the bleeding point close to the tongue, it is very difficult to put on a ligature, and in a case of that kind I have to rely upon some apparatus such as Dr. Nothenberg has presented to you.

I want to bring out another point, about malaria in tonsillectomy. Two weeks ago a lad whose home was in Drew, Miss., was operated on under local anesthesia, a tonsillectomy, in Chicago. He was taken off the train at Kankakee and went to a hotel. We took him to the hospital and under a general anesthetic couldn't find any bleeding point, but both fossae were just oozing blood. The only way we could control the hemorrhage was to put a pack into the fossa and sew the pillars over. The next day we learned that he had not been over his chills and fever more than two weeks when he went to Chicago to have a tonsillectomy done. The men in Chicago did the tonsillectomy in ignorance of his malaria.

Dr. Chas. M. Robertson, Chicago: In the control of hemorrhage you should take into consideration the different medications that control hemorrhage if you want to mop out the fossa. There is perox-

ide of hydrogen and ice water, which will control oozing hemorrhage. I think most of you will agree with me that oozing hemorrhages are the hardest things to control, not the ones that you can see. You can pick them up with the forceps and twist, and that's all there is to it. I don't think I can remember tying over about a dozen vessels in thirty years. I have had them so that it was all right to tie them also.

In removing tonsil tissue, you very frequently will have a little fibrous tissue in the fossa and in that fibrous tissue there is nearly always a little artery and that little artery squirts, but if you pick up that vessel and cut it out, it stops.

The idea is this: that that little artery is caught in fibrous tissue and it can't retract. If you cut it a little further so that you get it into the soft tissue, then the vessel retracts and the bleeding stops, and there is no secondary hemorrhage, and there is no late primary hemorrhage in a case like that.

I think we should all take the coagulant test, but we don't do it. If the patient becomes shocked from hemorrhage inject salt water into a vein until you bring the pulse of the patient down to 90. Then the hemorrhage will stop.

I told Parke-Davis I had noticed repeatedly in doing local nasal operations, in putting adrenalin in the nose that it would not blanch the tissues, that they would bleed and bleed and bleed, and you couldn't tell what you were doing at all. Now, that same case next week you put in adrenalin and it blanches in twenty minutes. Why is that? That is something for you fellows to work out. There is a change in the endocrine output somewhere.

I heard Dr. Otto Stein say the other night, "Don't put anything in the mouth. Don't even put your finger in." I always put my finger in the fossa, if there is any lymphoid tissue left. If you have got all of the tonsil out, you don't need to look. You can feel it in a second because it gives you that smooth mucous membrane feel.

There is a type of hemorrhage from tonsillectomies that is fatal, and that is where you cut the internal carotid artery out. You might not think that has occurred, but there are some 40 cases that have occurred where the internal carotid artery has been injured and death has followed. It is just as well to feel in there and see if you can get pulsation.

A fellow came into my clinic one time. I looked in his throat and I could see on both sides the tonsils just going like this. He said, "I would like my tonsils removed." I said, "Well, probably you will, but by somebody else." "No," he said, "I want you to take them out." I said, "If you will take the responsibility, I will do the job." So I enucleated the tonsils, and there was no hemorrhage at all. There was an anomalous position of the internal carotid artery against the old fibrous tissue which impulse was imparted into the throat. But you must always watch that.

The doctor said that he has among his cases no case in which the voice was worse. I had none

that were worse. Some of them were improved. Now, that should be a universal law. The voice should be improved. What kind of voice improvement did you have, do you know?

Dr. Nothenberg: It became high.

Dr. Robertson: You are not on to the job. The middle register of these cases is the one that is most affected. Patients will come to you and say they can sing low and they can sing over the tonsils, but, when they come to the middle register, their voice is foggy or gone. You can say to those patients, after this infection is out of the throat, and the thing is done without mutilating the throat, without pillarizing the throat or Sluderizing the anterior pillar, that the middle register will be better. That's true. The voice should be better. There should be more timbre to it, and more quality to it, after a tonsillectomy. There have been throats in which the voice was nearly ruined, but that was not on account of the operation. It was on account of the poor technique in the individual case.

You can also say this, that, in a majority of the cases, the tonsil operation will probably elevate the voice from a half to one tone. It makes it purer. It gives it more floating quality and makes it better.

There is another thing about this bleeding and healing. Did it ever strike any of you, the difference between healing in tissue? One of them will heal in three days and the other will heal in three weeks. One of them will bleed and the other will not bleed. One of them will contract and the other will be nice and soft.

You should be prepared to tell your patient, "that you are not a healthy risk, that you are liable to be a bleeder, you are liable to have bad results, this won't heal properly, and, if it does heal properly, you will probably have a lot of cicatricial contraction there, and, if there is, you must be operated on again," and finally you will get that case so that it is a good looking job like it should be.

Dr. C. A. Hercules, Harvey: With Dr. Pratt, of Minneapolis, I removed one tonsil and immediately after the tonsil was taken out there seemed to be not more than the average hemorrhage, but probably a hematoma or air filled in that whole side of the throat. The patient didn't die. We stopped operating at that time.

I have often wondered if there was an artery there that receded back of the capsule which was still bleeding. I don't know whether anybody ever had any experience of that kind or not. I never had in my practice. That's the only one I ever knew about.

Dr. D. J. Evans, Aurora: I was not born under as lucky a star as Dr. Robertson. I have had secondary hemorrhage which was quite bothersome. So far I have been fortunate, with no deaths.

There is an element here that, if we had more time to work with the general men, and could improve the patients' general condition, we would have fewer complications when the tonsils were removed.

However, there is a little hesitancy on the part of most men in the country to refer our cases for a

general examination. They may not come back for tonsils.

Now, in all my adult cases I insist on the coagulation test. In children, no. I really believe this should be done with all. It is safe. We would like to have it done on our own children. Why not do so with our patients?

There is an old statement, and I am getting to believe it more and more each time I operate, that if the tonsil is taken out right, at the right time, there will be no troublesome bleeding:

There should be no acute inflammatory condition, also the general condition of your patient must be taken into consideration.

Dr. Nothenberg, in response: I am pleased to see that so many took an interest in this paper and discussed it.

Where the sutures are tied directly, there are two things you should bear in mind, and that is that it is a difficult thing to get the suture over the end of the forceps at all times. Also, where it does not get a very firm hold as it sometimes may not, when the patient gags, coughs or strains these sutures may slip off and the bleeding recur.

As to putting the fingers in the fossae, that is a thing I have tried to eliminate by this technique, by tying with the forceps, and not touching the suture material at all.

Dr. Robertson said he has never seen a secondary hemorrhage. I have seen several and I have attended several. I attended one case some time ago. It was on the sixth day after the operation that he had a severe hemorrhage. Attempts had been made to control it from eleven o'clock in the morning until five o'clock in the afternoon without success. He came to the hospital and I sutured the fossa, which controlled the hemorrhage. He was pretty pale and exsanguinated by the time he came down there.

I have had many cases that I have been called in on before I began suturing, to control postoperative hemorrhage.

I tie off all the vessels I can find with bleeding points immediately after the operation. They don't always stop, by themselves.

Oozing is not as dangerous always as distinct bleeding points, in my experience. These will keep on bleeding and a clot form over the bleeding points. Sometimes it does not coagulate. I had a case where a clot formed which almost closed the pharyngeal opening so that the patient was beginning to choke, and bleeding continued after it was removed.

Monnell's solution wouldn't stop it, or any other styptic. It had to be ligated, eight or ten hours after the operation.

The method of operation may have something to do with it. Some use sharp, some blunt dissection, and some Sluder's method. There are many methods. I use the sharp or blunt dissection and snare. There are some cases where blunt dissection works beautifully, and you get a clean, nice enucleation. But, where the tonsil is very adherent, you may tear

the muscles or fascia with blunt dissection, if too much force is used. And in the rent or tear there might be a vessel that is situated deeply which is opened up and cannot be ligated very readily. Where tears are made they should be stitched together, with rather close interrupted sutures. The coagulation test I take in every case that I operate on. I do it because it is supposed to be done. You may discover something that will give you warning. In some cases the coagulation time was two minutes and it kept on bleeding after the operation and had to use pressure with a sponge probably for five or six minutes. Where the coagulation time was between seven and eight minutes, up to about the limit that's considered safe, bleeding would stop readily after the operation, no bleeding recur and no tying necessary. That's been my experience, but what that depends on, I don't know.

Some are coming to believe that the coagulation test doesn't amount to much. I see Dr. Robertson has gotten back to suturing the pillars which I have discontinued mostly; but I will say that you may have some cases where it is well to do it. In some cases of diseased tonsils there is also a degenerated condition of the muscles around the tonsils and they are soft and friable. You put artery forceps on and they go through the tissue as if it were cheese and it will not hold the ligature.

In those cases you may not be able to tie effectively and there is still danger of bleeding, unless the pillars are sutured together to reinforce and relieve the tension on the ligatures. In such cases it is well to know how to suture the pillars. The time for healing may be different on the two sides. I have often noticed that. I have come to the conclusion that, at least in some cases, it is due to the different pathological condition of the two sides. Where the tonsil is much diseased or where the process has involved the muscles, the healing time is longer, and there is more soreness on that side. There may also be some sloughing before healing. But on the other side, where the tonsil was probably less affected the peritonsillar tissue not involved, the healing goes on more rapidly.

I reported one case of emphysema, which developed a few hours after a tonsil operation. The swelling was mostly in the cheek and side of the neck. It resolved nicely. There have been some reports of such cases in the literature.

The serious danger of such a complication probably would be if the air should infiltrate the tissues of the larynx and choke the patient.

I don't believe there is any such thing as safety against hemorrhage by technique, by proper time, by method of operation, or by coagulation test. One doesn't know just how a patient is going to react or what kind of condition there will be after the operation. There may be some large branch of an artery which enters the tonsil.

In a case in which I took out the tonsils not long ago, there was an artery seen lying in the floor of the tonsillar fossa, uncovered, about the distance of

an inch in which the pulsation could plainly be seen. What it was a branch of, I don't know, but if that vessel had been cut, there would have been profuse hemorrhage, where ligation, no doubt, would have been the only means to stop it.

In conclusion I wish to say that in learning how to do tonsil operations, it is not only necessary to learn how to properly excise a tonsil, but at the same time acquire the technique of a practical method of controlling hemorrhage, because there is no question that hemorrhage is the great danger in this operation, and, in the literature there are many reports of deaths from hemorrhage following tonsillectomy.

CHILD HYGIENE.*

EDITH B. LOWRY, M. D.

ST. CHARLES, ILL.

Last year two and a half million babies were born in the United States—our future citizens, the men and women who are to be entrusted with the affairs of tomorrow. Precious as these little lives were, not only to their parents but to the country itself, one out of every thirteen died before its first birthday. In our own state of Illinois the proportion is about the same as in the country generally. According to the statistics of 1923, the last ones completed, we lost 81.9 of every one thousand reported live births. In other words, one out of every thirteen babies died before it was a year old. The map before you indicates which counties lost the largest percentage of their babies and which counties are the safest for babies.

If any manufacturer found that one out of every thirteen machines produced was destroyed largely through carelessness, he immediately would take steps to prevent this enormous loss.

I believe every physician here will agree with me in saying that at least half of these deaths might have been prevented by proper care, that this tragic waste of human life should be checked.

Other states have reduced their infant mortality rate to practically half that of Illinois. Certain counties in Illinois compare favorably with the best states, for instance, little Brown County lost only 36.8 babies out of every thousand or only about one out of every twenty-seven. Six other counties lost less than fifty per thousand.

These counties are Jo Daviess, Carroll, Woodford, Hancock, Scott and Greene.

But there are other counties in our state with such a high death rate that we are appalled. Alexander with a death rate of 168.4 causes us to wonder. Six other counties in Egypt have over a hundred loss—Pulaski, Williamson, Gallatin, Franklin, Perry and Marion. These are all grouped in the same section of the state and probably have the same unhappy conditions to contend with, but we cannot help but wonder why Henderson in the western part of the state and Will in the northeastern should have such disgraceful records.

In an effort to solve the problem, these counties have been visited in turn by a physician from the Division of Child Hygiene and Public Health Nursing of the Illinois Department of Public Health. This physician has called upon the majority of physicians in these counties in an effort to determine the cause of the high death rate among infants. The answers received from the various physicians are interesting, if not always enlightening and served to show that we are too prone to take conditions for granted without making an effort to improve our own communities.

The physicians generally express surprise at the high death rate and offered to cooperate in every effort to remove this blot from our state.

I quote the following from the report on Alexander as being typical of the southern counties visited:

The causes of the high infant death rate as given by the physicians were:

1. Large colored population.
2. Ignorance among all classes but especially the colored.
3. Inherited syphilis.
4. Failure to report births.
5. Fact that Cairo has a hospital.
6. Fact that Cairo is a dumping ground for Kentucky, Arkansas and S. E. Missouri.

Although several physicians mentioned midwives as a cause of the high infant mortality the majority seemed to consider them as a necessary evil. Only one physician considered that this condition should be remedied and he was most bitter in his denunciation of these so-called midwives. Several other physicians said, "If you do away with these old nigger grannies who is

*Read before the Section of Medicine, Illinois State Medical Society, Quincy, Ill., May 19-21, 1925.

going to take care of some of those dirty niggers? I know I am not."

In contrast to the opinions of the physicians the records in the county clerk's office showed:

1. More white babies died than black.
2. The majority of babies who had died were born in Alexander County and not in the neighboring states.
3. In only a very few cases was inherited syphilis mentioned on the death certificates.
4. The causes of death were given as:
 - Respiratory diseases.
 - Gastro-enteritis.
 - Malnutrition.
 - Premature birth.
 - Lack of care.
 - Convulsions.

An interesting item noted was that the coroner signed the greatest number of death certificates. Upon investigation it was found that until recently this office had been held by the undertaker, and in order to get a certain salary it was necessary for him to hold inquests on many cases. At present a physician is coroner so it may not be necessary to hold as many inquests.

No doubt the high infant mortality can be accounted for partly by failure to report births. Several physicians related instances where they had reported births to the local registrar, but the registrar who might be a miner, a storekeeper or some other person who did not appreciate the necessity of reporting the births promptly, had failed to forward the reports to Springfield. Several physicians suggested that they often drove twelve to twenty miles over bad roads, attended a normal delivery and left saying to the father, "Better come to town in a few days and give me the baby's name, so we can register the birth." Father fails to come in even to pay his bill, the physician cannot afford the time for a second call, so the birth is not registered.

In the northern part of the state conditions naturally are different. In Henderson County the physicians protested most emphatically that the county was not entitled to the high death rate. Those in the northern part of the county said it must be the southern part, while those in the southern part of the county blamed the northern half. The county clerk said it was due to the location of the county on the river, but his

attention was called to adjoining counties on the river with a death rate less than half that of Henderson County.

Will County still is a mystery although the majority of physicians seemed to blame the large foreign population, giving improper care and improper feeding as contributing causes.

After considering the reports from the various counties carefully we have come to the conclusion that according to the reports of physicians and statistics on record the high death rate in these counties, as well as many deaths in other counties are due largely to three factors:

1. Failure to report births. You will note that these statistics are based upon the number of reported live births. We know that practically all the deaths are reported, but if half the births are not reported the death rate naturally is high.
2. Premature births due largely to lack of proper care during pregnancy.
3. Ignorance on the part of mothers as to the proper care of babies. It is an undisputed fact that the average young mother has had absolutely no training or instruction in the care of babies. When her first baby is born she must depend upon instinct or the misleading advice of neighbors who though willing are equally as poorly qualified.

Considering these main factors it has seemed wise in attacking this high infant death rate to follow along three lines:

1. To endeavor to interest physicians, parents and town clerks especially in giving more attention to reporting births.
2. To endeavor to get every expectant mother under the care of a competent physician early in pregnancy.
3. To endeavor to teach young mothers and expectant mothers the proper care of babies.

As a part of this program a series of prenatal letters was prepared. There are nine letters in the series designed one for each month of pregnancy explaining the principal health problems as to diet, exercise, etc., but also explaining to the expectant mother the necessity of engaging her physician early and consulting him whenever problems concerning her health arise rather than some neighbor who is not qualified to advise her and who may give entirely wrong advice. Many expectant mothers never see a physician until

labor has commenced and some not even then. No doubt many of the premature births and complications of this period might be avoided if the physician were consulted early. That physicians who have investigated these letters approve of them is shown by the fact that they are sending in the names of their patients with the request that these letters be mailed to them. The letters are sent in plain envelopes to any expectant mother in Illinois who requests them. She should give her name, correct mailing address and date the baby is expected. A set of these letters will be sent to any physician, nurse, or health worker in the state upon request. The maternity problems in Illinois are different from those of some states that have few physicians. Illinois generally is well supplied with qualified physicians. The big problem is to get the expectant mother to consult her physician early.

The second endeavor on our program of prevention of the high infant mortality was the organization of young mother's clubs. Physicians agree that about half the deaths among babies might have been prevented if the baby had been given the proper care. The average young mother has had no opportunity to learn how to care for her baby correctly. In school she was taught many subjects but was given no instruction to prepare her for her job as mother. The young mothers of Illinois have realized this fact and last November a group of thirty young mothers of St. Charles organized themselves in a club to meet at regular times to study how to give their babies the very best care. The lessons were furnished by the State Department of Public Health. Each lesson deals with one subject as feeding, care of the eyes, etc. This club met with such a long felt need that similar clubs have been organized in the state. Full information regarding these clubs will be sent to any interested citizen of Illinois.

The suggestion is given to each club that every member take the following pledge: "In order that my baby may have the benefit of proper guidance, I promise to take my baby to a physician once a month until baby is two years old to be weighed and given health supervision. I promise to nurse my baby until baby is six months old unless advised otherwise by a physician. I promise to spend at least one hour a week reading or studying how to benefit my child and how I can be a better mother."

In order to interest young mothers and bring to their attention certain facts baby health conferences similar to the one sponsored recently by this society have been held all over the state. This summer a baby conference will be held in many of the counties at the time of the county fair, as at such a time many rural mothers may be reached. These conferences should be under the supervision of the local medical society while the state Department of Health assists only in working out the plans.

Baby health centers or infant welfare centers are established in many communities to which the poorer mothers may bring their babies to be weighed, measured and given health advice. The object of the service at the baby health centers is chiefly educational and is to provide for regular observation of babies to see that the "well baby is kept well" or to inform the mother when there is any deviation from the normal so she can go to her family physician for attention and treatment. A definite distinction is made between conferences and clinics. The former are educational and preventive while the latter are corrective and have no part in the program of public health or preventive medicine.

Other items on the educational program are being planned by the Division of Child Hygiene and Public Health Nursing of the Illinois Department of Public Health. If the physicians of Illinois continue to work in as close harmony with this Division as they have the last few months, then without doubt the year 1925 will show a great decrease in infant mortality.

In this connection I wish to pay a tribute to the foresight of this state society in appointing a lay education committee. Probably I have been in a better position than any of you to appreciate the great work this committee has done the last year for I have traveled all over the state and am in a position to realize the need of just the type of work that your lay education committee has been doing. If every physician in Illinois would contribute not ten dollars a year but ten dollars a month to the work of this committee he would find it returned to him a hundred fold before many months had gone by. The ethical physician cannot advertise but he can contribute to this educational work that will eventually cause expectant mothers to consult a physician early and trust his guidance rather than fol-

lowing the advice of a neighbor, that will cause the young mother to regard her physician as her best friend, that will cause this physician to be reinstated in his rightful place as family friend and health supervisor. The work of your lay education committee is doing more to bring the citizens of Illinois to realize the value and appreciate qualified physicians than any of us can possibly realize. May we continue it, only increasing their program.

And now in closing I wish to say just a word regarding your State Department of Public Health composed largely of members of this honorable society who are making a specialty of preventive medicine, educational health work.

I have been associated with this Department almost a year and have had an opportunity of becoming acquainted with the men and women who compose this department and, contrary to popular opinion, I have found the heads of divisions worthy and well qualified, men who have spent years training for their special line and most earnest in endeavoring to improve health conditions in Illinois. Within a few days I shall sever my official connection with this department and I only wish that each member of this society could have an equal opportunity of becoming acquainted with and learning to appreciate the work being carried on by your Department of Public Health. There should be no friction between this group of physicians and the remainder of this society. We all are working for a common end. Every time a physician criticizes another he is injuring himself, for these knocks act as boomerangs and injure the entire profession. Experience has shown that those most loud in their criticism of others fail to investigate and really voice opinions and are not willing to listen to facts.

Our profession, the noblest of all, should work as a unit and then, and only then, will Illinois be known as a safe state for babies.

DISCUSSION

(Abstract)

Dr. L. L. Robinson, North Cairo, said that conditions have improved. The county has a population almost half colored, and they generally do their own midwifery. Until the Metropolitan Life Insurance Company began to insure the colored people no record whatever was kept.

Now they can't get a permit to bury a child without a certificate from the doctor or the coroner.

There are numerous deaths never reported, numerous births never reported, among colored as well as the white. It is true that the doctor would report them to the district clerk, but perhaps he never reported them to the state.

Today the physicians are very far apart and it is almost impossible to get a physician. So there is a reason for this black mark we are so sorry to see in our counties.

Dr. Edward Bowe, Jacksonville, who has represented the medical fraternity before legislative bodies and also the interests of labor, expressed his hearty sympathy with the attitude of our ILLINOIS MEDICAL JOURNAL in the matter of lay education.

A large part of the opposition we have today in Illinois is due to our former position upon medical sociological problems. This question of infant and child mortality is an economic question and one that we understand better than any.

Here is an industrial county. Here are transplants from Europe, people unable to adapt themselves to the industrial and economical conditions of this country.

There is a struggle for existence probably where the father and the mother and all the children above fifteen years of age are working, and the babies on smaller children are left to care for themselves. What can you expect? You can expect death and disease and inferior individuals.

Dr. Clarence L. Wheaton, Chicago: Dr. Lowry's paper reveals a rather appalling situation so far as concerns child life. To us who live in great cities where we have efficient organization to solve these economic and social problems to combat these evils, we little realize the situation in more sparsely settled regions of our state.

Now, what is the solution? The solution for a problem of this kind is the same as for the solution of the tuberculosis problem in a great city. The solution was the dissemination of educational propaganda to those regions where the people lived, paving the way to further constructive work.

In certain counties there must be a very large degree of illiteracy. Pamphlets going to these people would not be read. We should send trained men, physicians, into these communities as we have done in other communities to teach these people by word of mouth the reasons in child hygiene.

If this paper by Dr. Lowry could be read by everyone it should have its influence in bringing about a change of such conditions as she relates.

Dr. V. J. Cohenour, Joliet, did not like the appearance of Will county on the map. "We have one of the best county societies in the state. We meet every Wednesday noon with an attendance of from twenty-five to fifty. We contribute to the state fund for education and we have just as good and up-to-date doctors as there are in the country.

"We have welfare stations with community nurses. We have three community nurses and three school nurses. We are getting good service. We do not

have to have any outside people come in and tell us what to do.

"All deaths are reported but several of the midwives do not report their births, therefore the infant mortality rate is apparently too high."

Dr. F. Emerson Inks, Princeton: The service of child welfare in the state is attempting to do a great deal of work. In our county it is the young mothers with the first babies who are coming to us. It is those who have had children before who neglect themselves.

Practically all of the babies we examined at the fairs are well babies. They should get the below normal babies to these contests.

He is in doubt whether all talkers that go out of the woman's clubs and speak on babies work are sanctioned by the Department. If they are not, they should get in touch with the woman's clubs and tell them if they want some talkers they should get the right ones.

A matter that has caused some antagonism is that they are sending out some tactless nurses. Some of the nurses coming out from the State Department assume too much. They come out with a smattering of medical education and attempt to act as physicians in the advice they give. Some of the lay workers are coming out and assuming as much as the nurses. It takes a pretty good lay worker to be able to get from just a little reading here and there as much as a nurse who spends three years or a physician who spends a number of years at college and a lifetime studying this work. He thinks the Department of Health should be more careful in the selection of the people they send out.

Dr. H. W. Smith, Roodhouse, though living in one of the "Banner" counties, thinks it does the counties of this state a great injustice to put out that kind of record.

The doctors of those counties represented as having such high mortality rates are not in any wise to blame for it. There are conditions there over which they have no control.

Dr. Lowry spoke about the causes of these children dying down there. She mentioned congenital syphilis. All right. Supposing they do have congenital syphilis and die? what do you want to worry about that for? If they lived, they would end up in some cell or penitentiary. Why don't you prevent that marriage and prevent those syphilitic children? What is the use of worrying about that baby? Probably the baby is better off dead. It is a case of the survival of the fittest.

Another thing we have trouble about is getting the names of these children. We have to report these cases within ten days, whether it is named or not.

Dr. John E. Tuite, Rockford, thought that if the conditions were reported by the same reporter from all districts there wouldn't be a very great difference. There wouldn't be a black and white district. There is nothing so deceiving as statistics. There is nothing

so misleading as a map that shows Will County so black and the others so white.

It all proves very conclusively that there are three kinds of liars. Plain liars, ordinary liars, and medical statistics. Your medical statistics, like any other group of statistics, are worthless unless they are compiled on the same basis.

A few years ago when I was doing more obstetrical work than now the local health department sent around a visiting nurse to check me up. She caught ten or twelve families that she thought I had not reported. She had new birth certificates and wanted me to sign them. It so happened that I kept duplicates of all my certificates and I had reported every one. They were among Italian people. I knew how to spell their names because I knew their language but the nurse did not. Supposing a like number of reports came in from all physicians in our county during the year of duplicate certificates, we would be very white. Why can we get so many duplicate certificates? Because of the enthusiasm of the local health workers and visiting nurses who, too often, go around sticking their noses into other people's business. (Applause.)

Dr. W. H. Maley, Galesburg: After all, education has something to do with it.

In counties and communities where nurses are going around visiting and talking and diagnosing the nurse has got to be properly qualified.

In Knox County we have nurses going around making a diagnosis, for instance, of tonsillitis, mumps, etc., when the diagnosis is all wrong. They are creating trouble. They are doing just what nurses are not intended to do. That, of course, is lack of education.

Then we have clinics being held by Dr. East and other such men in the city. These clinics are being held for the express purpose and advantage of one or two or three physicians who would benefit by the whole thing. Everything in connection with such clinics suggests that those patients should go to that particular doctor or bunch of doctors and that they should have trusses or splints and braces ordered of some particular firm. It has not been done on the square. It has not been fairly and squarely for the patient. It has been for the benefit of a few nurses or physicians and to the detriment of the regular family physician and to the detriment of the patients themselves.

When we have that thing on a square basis and it is done honestly and squarely for the patient and for the community as a whole and not some particular favorites we will have better results.

Dr. Ben Russell, Hull: The state requires the same kind of doctors in Will County that they do in Kane or any other county and so we presume that they are qualified just the same as the rest of us.

He believes that those fellows are capable of taking care of themselves and don't need very much outside help. Take the young mothers our Princeton friend told us about who telephoned in. Why? They are taught these things as children in the schools. As they go through the high school it is kind of pounded into them. And the young mothers are telephoning

in but the old mothers are not. Now, we can get at these little girls when they are playing with their dolls and keep at them all the way up and it won't be very much expense.

Our teachers are busy enough. But they are getting better pay than they did 15 years ago. Get it in the schools and, for Heaven's sake, don't build a \$200,000 school in a \$20,000 town. They can learn just as well in a log cabin as they can in a brick school house.

Dr. Edith B. Lowry (closing): I am delighted with this discussion. It brought out just what I wanted to have brought out. I do not think these statistics are right either. I don't think they should be; but they are the ones that are being distributed all over the country.

Right up in the corner it says those are based on the reported live births. If any of you last fall had a copy of the Bulletin of the League of Women Voters you will know that Illinois was a very black state. Only half a dozen others were as black as we were. That is the information being sent out all over the country. We want the truth sent out. I live in Illinois. I have lived here for at least twenty years. I have practiced medicine in Illinois for seventeen or eighteen years. I think we have as good physicians here as any place. My husband is in general practice in Illinois.

I have always felt that these statistics that are being sent out over the country are a reflection on us. We all belong to the same group. I have belonged to this State Society since 1907. It may be that it is longer than that. My whole object in this paper is to get you interested and let you know what is being said about you. I know that you know how to take care of babies. We are not trying to tell you how. You know better than I do. We are bringing to your attention the things that are being said about you.

If the gentleman from Joliet had been present during the reading of the paper he would have heard me say that Will County was a mystery to us. We knew they were doing a great deal of work. We have not been able to account for that. Those are the statistics on record. We have nothing else to go by. We take the reported live births. We believe that Will County and all these black counties would not be black if we had all the births reported. I believe really that every one of our counties could come down to just as good as Brown County. I live up near Will County. Kane County is my home.

Somebody spoke about Dr. East's clinic. As you know, up to about a year ago last January the principal work of the division of child hygiene was crippled children's clinics. At that time it was decided these were not a legitimate activity of the State Department of Health. They were transferred over to the Illinois Crippled Children's clinics. So the State Department of Health has absolutely no control over them. This meant that the division had to be reorganized. Dr. Rawlins asked me to reorganize it. I hesitated for quite a while.

For five years previous to this time I had been with the United States Public Health Service. I traveled in half of the states of the Union for the United States Public Health Service.

I don't believe we are a bit worse off than the other states. I know we are better off. The conditions are different from some other states because we do have in Illinois plenty of well qualified physicians. There is not the shortage there is in some other states. When I went around to the other states I would hear about the Illinois death rate that is being given out all over the country. Those are the statistics on record in Washington and in Springfield. The only way we can prevent their being given out is our reporting our births or doing something else.

Somebody spoke about the Metropolitan Life Insurance Company doing such good work. They are doing excellent work. There are some other companies doing very good work.

I think Miss Keller, in her work yesterday, brought out the fact that there should be a cooperative plan of all of these organizations working together and directed by physicians. As it is, you know that the health work in various communities is directed by somebody else.

I know in my home town how things have been. Before I went into the Illinois Department of Health a group of women in the town planned to have a baby conference. They didn't say a word to the local physicians until the night before. Then they called up and asked us to assist. That was the week the American Medical Association met in Chicago. We had planned to go there. We simply declined. We said it would be impossible. They go out and say, "Well, the doctors wouldn't help us." Now, that is what we are trying to avoid. We are trying to get the health work worked out properly.

Regarding the work on trachoma, the doctors were being criticised by a nurse, saying they would not cooperate. I happened to go into that county on a little trachoma scare which turned out to be little more than a scare. When we went back with a trachoma expert at the request of the physicians the local medical society met and went on record as approving everything we had done regarding the situation.

We helped put a new nurse on in the school. I asked her to visit every doctor. I asked the physicians not to criticise her if she made some mistakes. I asked them not to find fault, but to take up the problems with her or with us. That is what we are trying to do.

Please don't bring up back records because this division has had in the past clinics of which you did not approve.

Somebody brought out about the pamphlets not being read. I want to say just one word about these young mothers' clubs. We have found that all over the State there are graduate nurses willing to act as leaders of these groups. We are trying to get these ignorant mothers together and have a lesson for them.

AGEING AND ALZHEIMER'S DISEASE.*

FRANK PARSONS NORBURY, A. M., M. D.,

F. A. C. P.

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JACKSONVILLE, ILLINOIS

The subject of ageing concerns us all. "Man's interest in the problem of his own senescence, old age, and death undoubtedly dates from the time when he first began to think and ask himself questions concerning himself." (Child.) But as the basis of clinical problems, it has only been within the last twenty-five years that ageing and old age have been considered from the experimental and analytic point of view. The data, as now compiled, are in keeping with modern research and clinical methods. And while yet largely descriptive and statistical, clinical pathology has given us clues which enable us to interpret disease phenomena more nearly in accord with the trend of clinical medicine. Draper cautions against the tendency to overlook the final biological purposes of clinical observations, when he says, "under the impulse of growing knowledge of the endocrine glands the discussion of habitus has become fashionable in clinical medicine." And, further, "if one examines the extensive literature of endocrinology and also that of its venerable but recently reborn ancestor, constitution, two things become at once apparent. On the one hand, where mensuration (the statistical method) has been used there is great uniformity in technic; and on the other hand, most of the discussion of habitus is purely observational and descriptive. While ageing has been more systematically studied during the past twenty-five years as my own experience confirms, yet, in a greater measure, this tendency in accumulating data, has been observational and descriptive, rather than experimental and analytic save in such excellent work as that of Minot, Robertson, Child, Morgan, Loeb and others. We all grow old from the time of our conception to the end of the story of each individual life.

The optimum of life: the maximum longevity of each individual is a variable in the equation of the life problems of human beings. The series of biological changes which occur from infancy to old age, resolve themselves into problems of conditions of living matter, modified by native heritable potentials, environment, circumstance

(including disease and accident). Here, in the series of biological changes, is where we need more practical worthwhile scientific knowledge of human constitution with its native potential trends, now being revived by Draper. Ageing then will be better understood and we will not be guided by the "blue sky" commercialized literature of the exploiters of ready made formulae of glandular products, proclaimed to rejuvenate and to stay the progress of growing old. We must not forget that ageing is a problem of living; an essential feature of life and its end is death. The period of senescence (to which biologically belongs the so-called pre-senile period) is not the rapid or chief period of decline, which the poet or the peasant would have us believe. In fact, as Minot says, "paradoxical as it may seem old age is the period of slowest decline." Ageing affects every organ of the body. But longevity, as stated by Osler, is a vascular question. We are familiar with the senile heart. Its apparent increase in potential power, we know, is a myth. That while it does enlarge, its potential power never increases but rather loses in its endeavors to meet demands put upon it, by the decrease of the elasticity of the large and small arteries and the capillaries. Again, arterio-sclerosis capillary fibrosis with their variable interferences, contribute to the compensatory problems, which ageing is forced to meet. We have no right to consider that normal senescence is a disease process. Minot strongly controverts this idea by saying that the fundamental and essential changes, which are characteristic of age, while they are novel and startling, do not represent disease. He also controverts the opinion too blatantly expressed, that arterio-sclerosis is responsible for ageing. Minot's studies in comparative physiology and comparative pathology, prove that arterio-sclerosis is not responsible for ageing. It is atrophy, a perfectly normal and inherent process, which is the basis of ageing. Minot says this is well illustrated in the brain of a bee. The brain cells, which build up the brain actually shrink. This atrophy is compensated by substitution of inferior structural elements. This is one of nature's methods, viz; that when superior structure is destroyed or wastes, and as nature abhors a vacuum wherever it may occur, the place is filled or compensated for, by substitution of structural elements of lower structural grade. In the words

*Read before Illinois State Medical Society at Quincy, Ill., May 20, 1925.

of Minot, "A yielding of the noble to the baser parts."

This principle was beautifully elaborated in neuro-pathology by Bevan Lewis, over thirty years ago, in his studies of chronic cerebral atrophy, wherein is shown the so-called scavenger cells replace nerve cells in the cortex as atrophy proceeds. This same principle applies in Alzheimer's disease, a specialized form of disease of the brain occurring in the senescent period of life, even though senescence, in so far as chronological years are concerned, may be premature. In Alzheimer's disease, the normal progress of ageing in the brain, is supplanted by a disease process which impairs the noble faculties of mind by dementing them. They yield to the baser vegetating functioning, to the degree that the brain can no longer do the sort of fine and efficient work, which it could do before. Here we see man, the noblest of the created living beings: he who tops the scale of all creation, through the pathological processes of ageing, compelled to suffer more than any other living creature from old age. This pathological process delineated in Alzheimer's disease, emphasizes the anatomical quality—(the organic basis of mind) as fundamental in the study of mental life—the mental mechanisms of man. It is in this field of research where microscopic structure reveals the changes which age produces in all organic life, both animal and vegetable, that the workers have shown the problems of age, normal and pathological are essentially biological in their broadest sense and include problems of growth and death. We find that senescence is necessarily an inevitable feature of growth and differentiation. Life is a cyclic process. Man's cycle is growth, differentiation, ageing and death. No part of man's organism remains perpetually undifferentiated nor perpetually young. The young organism arises from the old and the young becomes old. This is what Weissmann implies as the "immortal life cycle," through continuity of the germ plasm, from generation to generation. The conspicuous evolutionary feature of man is found in the integrative structural and functional activities of the nervous system. The specialized structural substrata of man's central nervous system are normally the most stable living tissue in the body. Its cells persist through the vicissitudes of every day living, meeting disease, accident, etc., with wonderful stability, and due to

the high metabolic rate in the nervous system. It is in senescence, that we find changes occurring in cell life which are characteristic. These changes are commonly called senile atrophy, wherein the cells essentially decrease in size and show more or less degeneration. These changes are widely distributed. Atrophy may involve all of the organs of the body, viz: liver, kidneys, alimentary tract, lungs, musculature, skeleton and the nervous system. The arterial system always shows changes in the direction of decreased elasticity and contractility and the hardening of the walls; arterio-sclerosis. But do not forget that arterio-sclerosis is not the characteristic feature of old age. In fact, cerebral atrophy may occur without arterio-sclerosis. Atrophy of old age is associated with decrease of the rate of metabolism. Child says, "It is a well known fact that a decrease or cessation of functional activity in the specialized organs, after their development, brings about atrophy quite independently of age." He says, too, that "the atrophy of old age in such fundamental and important tissues as the nervous system, indicates there is some truth in the statement, so often made, that the later stages of senescence are a "wearing out" of the physiological mechanism or some essential part of it. Apparently the nerve cells or some of them do wear out, because they are no longer able to synthesize the substratum necessary for their continued function. Normal senescence, old age, in its final stages, however, marks but the end of life's cycle—the end chapter of progressive development from conception on through the successive acts of the drama. The factors which potentially and progressively follow from beginning to the end are biological.

Normal healthy old age should be a normal process of involution with progressive gradual atrophy and loss of vitality and free from morbid morphological changes, due to intercurrent extrinsic factors such as the terminal or residual factors of disease, or intrinsic conditions incidental to abnormal metabolism.

It is difficult to draw a clinical differentiation between normal and abnormal old age. We know more of the morbidity: the pathology of old age, than we do of its physiology and anatomy. Rolleston has this to say regarding the foregoing statement, "in attempting to decide when old age should be regarded as a disease or merely a process of involution or regression,

which naturally follows, the earlier and progressive stage of development, it may be well to refer to the meaning of disease and health." Disease or want of ease, as stated by Moore, has been variously defined as evidence of imperfect function, as discord and as maladjustment, between the individual and his environment. Health is defined as the indication of perfect functional activity; as harmony between the individual and his environment. These definitions of disease and health are especially applicable to mental disorders. At all stages of life, mental adequacies demand a balance; an adjustment between the individual's desires and abilities; his powers to lead to harmonious, co-ordinated adjustment. This is true evidence of average mental normality of all ages of man, from infancy through old age. In our clinical observations, we find this fact to be true, that normally all organs do not grow old with the same rate of progress. The central nervous system has a tenacious hold on life and tends to remain intact, even under extreme attacks, by disease or accident. Under varying and extreme involutional conditions, departures may occur in the progress of ageing, which show themselves in pre-senile morbid, mental disorders. Of these organic disorders we find those showing precocious atrophic changes in nervous structure, which may be due to faulty inherent weakness, or acquired conditions; the aftermath of infectious and toxic states. Thus are developed pre-senile errors in "the chronometry of life," as Paget termed the difference in ageing of organs. The brain feels these precocious involutional changes, which reflect themselves in the mechanisms of the mind. Changes, which chronicle progressive mental decay. It is one of the unique features of mental impairment of ageing, that certain faculties or mechanisms are more affected than others. Some faculties retain their brilliancy while others show marked impairment. Why does memory fade early in the involutional changes, especially of recent events? Why do memories of remote experiences and events of long ago, which seemingly have been hibernating for years, come forth with startling exactness? The answers are found in the basic fact that such memories are organic, and as such they represent the make up, and are representative of experience. Wherever and whenever we observe

experience it is "intimately and unequivocally related to bodily organs and to bodily functions." There is relation of the qualitative moments of experience to the central nervous system, the nerves, the reception organs and musculature. The reception organs of vision, hearing, taste, smell and touch, with their functional connection with the brain through the neuronie mechanisms, from the beginning of the infant's life, in this world of pleasure and pain, are concerned in acquiring and registering qualitative varieties of experience. The organization and utilization of this experience requires incorporation and integration in the development of normal mental activities. Three distinct mental processes are involved when these experiences are represented in our very day life, viz: memory, imagination and generalization. Experience may, therefore, be represented as memories, as imaginations and as generalized objects. A fusion may make a memory, an imagination or a generalized object. In the involutional changes of ageing receptor organs may and do lose their acuity of perception; the changes in the neuronie mechanisms lessen the ability to register perceptions, however faulty they may be.

The inhibited functional activity of the mechanism of association delays generalization. Therefore, memories of recent events are faulty in being acquired; they fade easily and may be lost entirely. The old memories laid down in the matrix, when it was plastic, come forth from the regions of the subconscious, to play major roles in the closing scenes of life's drama. Ageing has a psychology of its own. To understand it we must know its biological basis and its neuro-pathology. Alzheimer's disease illustrates the psycho-pathology as well as the neuro-pathology of the most interesting involutional changes of ageing. The psycho-pathology is in evidence and marked by gradual mental deterioration. The clinical findings are variable, but always in evidence are memory loss and memory dissociation, as shown in confusion, clouding and confabulation. In the order of memory defect, names seem to be the first to go—then dates, then almost any new impression. Finally, a marked conscious effort of association is needed to recall events and impressions. Brain tire, brain fag, becomes a reality when prolonged concentration is necessary in order to hold attention to detail and sustained mental effort.

Memory defects occurring in individuals over thirty or thirty-five years of age, and having little apparent pathology, become of suggestive clinical value, as possible evidence of the beginning of Alzheimer's disease. When memory defects show lack of comprehension or insight, as to the lack of congruity between actual circumstances and experiences of every day life, and the manner of thinking and talking about them, then the individual is entering, or has advanced, into the clinical pathological phases of ageing. Again, when an individual may seem to comprehend and have insight as to experiences and circumstances and yet, when asked about them soon after the facts have been presented, is utterly unaware of them or has distorted impressions, then it is time to take clinical cognizance of the case. Again, if the same questions are asked over and over or the same story told in the use of same words and manner then be considerate. Again, do not ignore the clinical value of defects involving the next important psychological constituent of experience, viz: imagination.

Here we enter the realms of abnormal fears, with their suspicions, their illusions, delusions, with crises and episodes of wild, stressful excitement, or anxious worries with agitation. These conduct reactions may be episodic and temporary at the beginning. But sooner or later they return and may become a continuous performance with noisy paroxysms, irascibility, excitability and perhaps homicidal tendencies. Thus goes on the clinical picture of Alzheimer's disease. The appreciative interest with defective imagination, gradually being lessened and distorted, brings faulty generalizations, as a consequence. This important constituent of experience being involved, there follows necessarily the clinical evidences of mental deterioration. Women suffer more than men, especially where decisions concern family life.

Women, who previously were judicious, sagacious intellectuals, in fact, find themselves lacking in decision in execution, where decision and vigor are required. The failing mind goes along with the failing brain and physical vitality, too, shows the effects of premature ageing upon the organism as a whole. Both men and women, at this stage of progress, and after possibly one or more episodic periods of excitement and stressful anxiety have occurred, become real clin-

ical problems and need psychiatric study and guidance. Especially is this true when the economic and legal problems of property rights are factors in family adjustments. A divided family may lead to undue advantage being taken of the unfortunate victim of Alzheimer's disease and easily influence him to harbor ideas of conspiracy, of unwarranted interference with his affairs, etc., and thus lead to the interminable problems of making of wills, which the courts are asked to construe, and to decide, as to their validity.

I beg leave to urge the family physician, in dealing with his clientele, to go into the history in detail, and to be deliberate in exacting clinical findings, lest he give snap judgment on the ability of the disposing mind of an individual to make a will. The legal end of these problems is one of degree. And how much or how little of the requisite mental elements, necessary from a medico legal standpoint, are present, must concern the family physician in these problems. Again, Alzheimer's disease has social, clinical value in experiences involving domestic relations in family life. Many of the family upheavals leading to separation and divorce in involutional period of life have neuro-pathological basis. The family physician again becomes the valued observer of current family events and should be alert to understand episodic experiences where family life seems to be on the point of disruption.

Some of the symptoms having value and significance belonging to the complex of Alzheimer's disease, appear as early as thirty or thirty-five years of age. The most important and striking features are memory defects, poverty of thought, reduction of constructive interests, confused expression of ideas, lack of comprehension and ability for self-expression, character change, episodes of fear reaction, excitability, undue restlessness and noisy emotional explosions. Also compensatory conduct reactions, such as talkativeness, loquacious circumstantiality—loud speaking, "constantly talking and never saying anything," with episodes of laughter or crying. In brief the foregoing is descriptive of the clinical picture of Alzheimer's disease in the early years of its onset. In the latter years dementia becomes more and more a feature. Death from intercurrent disease may terminate the case. But it is not unusual for such cases to live to a rather extreme old age.

Many of these cases in the progress of organic changes, develop palsies of facial and hypoglossal nerves, atrophic spastic, paraplegia, tremors, epileptiform seizures, bulbar disturbances involving speech and swallowing. Most all cases sooner or later have involvement of speech (some sort of aphasia), also agnosia or apraxia (mind blindness in varied degrees). (Barrett.)

The clinical pathology, chronic cerebral atrophy of Alzheimer's disease is better shown by slides than by endeavor to explain the changes. The distinguishing histo-pathological changes are the marked degree of degeneration of the nerve cells and fibres with the occurrence of substitute tissue in forms of plaques or degeneration of intracellular neurofibrils—both usually occur. The plaques occur as miliary foci of tissue disintegration, or deposits of homogeneous substances, with surrounding glia reactions. They are widely distributed through the cortex. They are found in the thalami, cerebellum, etc. (Barrett.)

Further, the cells show regressive changes: the most prominent of which is a severe degree of fatty degeneration. Cells, showing the neurofibril degeneration, occur in all regions of the cortex, in a degree rarely met with in senile dementia. The intra-cellular neurofibrils are of increased thickness, often fused together or formed into loops, whorls and (rounded masses) (basket like formation) which persist after degeneration of the cell body and ultimately disappear. This process of degeneration and active elimination by scavenger cells, is especially marked around the plaques. Blood vessel changes are not constant and are only incidental when found. (Barrett.) Arterio-sclerosis may exist but it is only concomitant and not a feature of Alzheimer's disease. The neuropathology upholds the independence of Alzheimer's disease. Likewise the clinical findings support it as a clinical entity; the distinctive clinical features being the early age occurrence (as early as thirty-two), with no external evidences of senility; the rapidity and nature of the progressive mental deterioration and prominence of neurological disturbances which, as grouped, are a rarity in senile dementia. The differentiation in diagnosis is to be made from arterio-sclerosis; from neuro-syphilis and organic disease of the brain incidental to forms of cardio-vascular disease. The mental differential diagnosis must consider the senile psychoses as a group, and

then by elimination and exclusion arrive, at least, at a tentative or provisional diagnosis.

Alzheimer's disease, to the general practitioner, has a practical value in its medico-legal significance. Here is where the family physician is called upon to interpret conduct reactions. Here, rests a responsibility when property rights are involved; also when episodes having moral values enter, and where even homicide, assaults upon children, other criminalistic trends and suicide are conspicuous, in the mental picture, as presented. Others, beside the individual concerned, must be considered in our interpretation of mental symptoms; especially dependents and objects of the individual's bounty: his business, his associates and the welfare of the community. Alzheimer's disease is, in my experience, worthy of our earnest clinical consideration.

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DISCUSSION

Dr. Charles F. Read, Chicago: Concerning the pathology of the senile brain I have nothing to add to Dr. Norbury's excellent presentation. I think it is a most interesting paper because of the manner in which the Doctor has dealt with it. He has shown us the widespread ramifications of the subject.

As to Alzheimer's disease, those in general practice care very little probably about the brain finding and the acute symptomatology; but you are interested in senescence. We all are. It is one of the great problems of the human race as to how we shall increase the useful span of life and remain productive individuals as long as possible. Dr. G. Bernard Shaw, the great dramatist of England, is a wonderful example of what a man can accomplish in the senescent period. He is a man over 70, and has just written a play that has been produced throughout the civilized world, and believes the world would be a better place to live in if life could be prolonged to 300 years or more.

As Dr. Norbury has said, with increasing years there is a reduction of the number of cells, a reduction in the quality of the brain cells, some destruction of their inter-communications, and so we find memory and imagination failing and the power to accomplish

things also failing. The brain is an organ of adaptation, just as the hand and the heart are. The mind is apparently a function of the brain. If the brain is affected, mind and mentality are affected. We have had dualistic theories of mind and matter, and I fear these linger in the mind of the general practitioner, who still feels that affairs of the mind lie in the field of the metaphysician as it were, and do not interest him.

Now, here is a condition that is pathological, that has a definite histological picture. You see it under the microscope. We find that it is reflected in the behavior of the individual. The Doctor's remarks concerning the behavior of these early seniles or late seniles, with regard to sexual indiscretions and excitements, and so forth, gives us a line for the possibilities that are bound up in behavior abnormalities of all kinds. We see that abnormal behavior is not a matter of something from without entering into a man and changing him, but a matter of faulty development, original faulty development or some deteriorating process setting in.

This means that the whole field of abnormal behavior really lies within the scope of the medical men's activities. We all are interested nowadays in endocrine speculation. We don't know very much about the facts but we are fascinated with the possibilities of what these ductless glands may mean to us in medicine. Some people are originally better endowed with glandular apparatus and nerve tissue than others. Senescence means the giving away, somewhere along the line, of the endocrine balance and at the same time deterioration of the nerve substance.

Dr. Charles B. Johnson, Champaign: I was very much interested in the paper. Some years ago I read before this society a paper on "Old Age." It was different from Dr. Norbury's paper. It was not very scientific, but I treated it more especially from the art of growing old gracefully.

My observation teaches me that in that direction there is a great difference in individuals. Old age runs in families. That is to say longevity runs in families. I am sure of it. I have had occasion to do a great deal of life insurance work during my professional life, and I have noticed this fact. The grandparents live to be old and the father, and so on, through the whole family line. That is another way of saying that some families have more resistance than others, for that is what it amounts to.

We have had some examples of people being very bright in old age. Dr. Oliver Wendell Holmes was one. Gladstone was another. I am an old man myself, according to the almanac, but some way I can't realize it. I will be 82 this fall. And my people on my mother's side are all octogenarians.

Dr. V. A. McClanahan, Aledo: I want to mention the case of a man who came to me. He doesn't seem very old. He is sixty. I hate to think a man of sixty is old, naturally.

This man was a man of good habits always. He had rather high ideals of life. His wife was married

before. He is her second husband. They sent for me to come out in the country. This man has threatened suicide. He says that his wife is inclined to entertain other male visitors. It is absolutely not true at all. There is a miserable state of affairs.

This man has not a high blood pressure, very little arterio-sclerosis and very little prostatic trouble. And still there is this tendency to think these things are wrong.

Dr. Norbury talks about involution and evolution. There is no man I like better to hear talk than Dr. Norbury. He takes us away from ordinary, every day affairs sometimes. I would like to ask Dr. Norbury what is the difference between the brain cells of Adam and those of the modern man. Has evolution changed them?

Dr. F. Emerson Inks, Princeton: I am more or less interested in middle life and ageing as I have been attempting to keep up with medical progress. I have even wondered why there has not been more work done with regard to age.

It seems to me possible that in our specializing, we were attempting to specialize in the wrong way. It seems to me there is a big field for specializing in different ages of life.

When we have annual health examinations that is going to help Dr. Norbury and those interested in his work in catching up these things before they get so far, and probably where they can't help.

It seems to me that those interested in pediatrics can also help. They can help each other out by looking back. These who are studying the aged, where they find there has been some mistake made in youth or childhood, can call that to the attention of the pediatrician and see if they cannot help to overcome that wrong beginning.

Dr. Goerge W. Hall, Chicago: Dr. Norbury of course is presenting a paper which of itself is regarded as a comparatively rare condition clinically speaking.

At the Psychopathic Hospital in Chicago we see a great many cases coming in there which clinically would correspond to the cases which Dr. Norbury has been speaking about. Especially do we get cases there which become very troublesome to us in the way of classification because so frequently we are unable to get a good social service history.

We study the case and we are not quite sure whether we are dealing with the simple case of jealousy as cited in the case mentioned by one of the speakers or whether we are dealing with an abnormal mind. Then when we get the social service history the case is so completely checked up that there is no doubt in our minds that we are dealing with an abnormal brain. We are prone clinically, of course, to classify those cases as pre-senile psychoses. They are not infrequent at all.

The case Dr. McClanahan has just spoken about is one of the common cases we get there of where the husband becomes suspicious of his wife. And especially is that true where they are so likely to turn against their nearest relatives. In looking over their

mental condition we find that the important thing is the memory defect. The slipping of the memory in association with these suspicions.

Speaking in relation to the making out of wills and the disposing of property, it is not at all unusual that relatives see that, as the patient is slipping, so to speak, mentally, something must be done to conserve his property interests; and it is a very important thing to be able to detect the memory defects in those individuals in order to conscientiously come before the courts and state that you think you are dealing with a man with an organic disease.

That is the reason that so frequently the relatives take issue in the case and it makes an extremely stubborn case to deal with. Some relatives will think he is all right, while other members of the family are just as sure there is something wrong with the individual. It sometimes takes a study to be able to come to the proper conclusion in those cases. As far as being able to follow up the pathology in those cases, I have not been able to make any definite classification.

(Lantern demonstration by Dr. Norbury.)

THE DANGERS AND THE ESSENTIAL SAFEGUARDS IN THE ALKALI TREATMENT OF PEPTIC ULCER*

L. C. GATEWOOD, M. D.

CHICAGO

The use of alkalies for the relief of pain referable to digestive disorders may be traced back to very early times and most of the forms of medical treatment for ulcer which have been devised have included the use of alkalies as an essential part. They were not, however, used in very large quantities until after Sippy had described his plan of treatment and advocated the use of alkali in amount sufficient to control completely the free hydrochloric acidity of the stomach contents. This form of treatment requires in the average individual the equivalent* of 800 to 1,000 grains (50 to 65 grams) of sodium bicarbonate per day. There are, however, patients who require 2,000 to 2,400 grains per day (130 to 160 grams) to control the acidity and there are some who secrete more acid than can be controlled even with such quantities. I have never felt justified in using more.

The use of such large quantities of alkali was not begun abruptly but was reached by a gradual

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*This is not all used as sodium bicarbonate, but is in part made up of calcium carbonate and magnesium oxide, which have a higher combining value and of which relatively smaller quantities are therefore required. It is convenient, however, to express the total amount in terms of the quantity of sodium bicarbonate.

increase in dosage over a period of several years, beginning with a daily intake of 300 to 400 grains and gradually increasing the quantity as confidence was acquired in the ability of the body to tolerate the introduction of larger amounts.

It was early observed, however, that there were certain groups of individuals who did not well tolerate the larger doses of alkali and as blood chemical determinations became more rapidly available two outstanding groups of untoward effects have been observed: those related to nephritis and to alkalosis. It was early recognized that there was a definite danger in administering to the individual with damaged kidneys the quantity of alkali usually required to completely control acidity. Whether this is dependent upon the effect of continually rendering the urinary output highly alkaline or upon the additional load placed upon the kidney in eliminating the salts formed by the reaction of acid with alkali, is a problem of interest not only in its bearing upon the questions involved in ulcer treatment but also because of its bearing on general problems of kidney physiology. Those patients who fail to eliminate the total quantity of waste thus arising show the diminished alkali reserve of a mild acidosis and this finding favors the latter explanation.

The symptoms resulting are those of any nephritis with retention of an abnormally large quantity of nitrogen waste—headache, dizziness, nausea, loss of appetite, and general malaise. In the earlier stages edema does not usually occur and albumen and casts may or may not be present in the urine. Blood chemistry shows as a rule an increase in all of the nitrogen wastes except creatinin which is usually normal or only slightly increased in quantity. Chlorides are usually normal or only very slightly increased. In my own experiences nephritic disturbances have been manifest in 8% of the cases placed on alkali treatment. These changes seldom occur in young individuals without previous clinical evidence of kidney disease, but must always be watched for in patients with previous history or findings of nephritis and in old people with advanced arteriosclerosis even without previous evidence of nephritis. It does not follow that alkali treatment for ulcer is precluded in all such individuals for some of them tolerate even large doses of alkali without trouble, but they are as a group prone to develop the

disturbances mentioned and must be carefully watched throughout the entire period of management. Those individuals who are markedly anemic, either as a result of hemorrhage or because of nephritis, are especially likely to tolerate alkali poorly. The custom in certain hospitals of regarding all unexplained hemorrhages from stomach or bowel as due to latent ulcer until proven otherwise and immediately instituting intensive alkali therapy has occasionally resulted in adding to the kidney insufficiency of a patient who was having a hemorrhage from the gastrointestinal tract as a part of a uremic or pre-uremic state. This may be avoided by insisting upon a urinalysis and a blood chemical determination at the earliest possible moment, together with a continual alertness to observe and recognize the clinical manifestations of nephritis. In all cases it is advisable to have a chemical determination of blood nitrogen at the outset of management and after a period of three to four weeks—earlier if there are any manifestations of kidney disturbance. The urine should be examined at frequent intervals subsequently and upon the finding of any albumen or casts, blood nitrogen should be determined at once. Fortunately, for the safety of the patient such disturbances usually manifest themselves within the first two or three weeks of treatment and occur therefore while the patient is still in the hospital under close observation. Acute febrile infections or other similar conditions arising subsequently may so add to the load put upon the kidney as to overwhelm it later in the course of treatment and especial observation is necessary in the event of any such intercurrent disease during the course of ulcer treatment. In general we prefer not to institute alkali therapy for ulcer in the presence of a known nephritis and when it is found necessary to do so we limit the dosage of alkali to that which will not cause material increase in blood nitrogen, controlling the course by frequent blood chemical analyses. It is true that those patients who because of nephritis are not favorable subjects for alkali therapy are in general also poor surgical risks and this group of patients require careful study and nicety of judgment in order to determine for them the course with the minimum risk. The tribasic magnesium phosphate powders suggested by Shattuck¹ have been employed to advantage in some cases in which there was nitrogen retention

with the alkalies ordinarily used, but in most of the cases in which they have been tried after disturbance had developed on the usual powders it has likewise been found impossible to control the acidity with them without further increasing nitrogen retention.

The other type of disturbance prone to occur on alkali therapy is that which has been designated in the literature as alkalosis. At the outset it should be stated that it is not by any means wholly dependent upon alkali administration since it has been repeatedly observed in patients who have received no alkali. It has been most frequently observed in those individuals who have obstruction at the pylorus, in the duodenum, or elsewhere in the upper part of the small intestine. It has been described at some length in the literature by Haden and Orr², McVicar³, Brovonetal⁴, and others. It is related to or commonly associated with alterations in gastric secretion which may give rise to the outpouring of a large quantity of watery fluid often containing no acid. It has many features in common with the manifestations of acute post-operative dilatation of the stomach. While certain chemical observations have been recorded, the pathogenesis and chemistry of this condition are as yet not satisfactorily explained. The condition is characterized clinically by nausea and vomiting, evidence of dehydration, and in the more severe cases by tetany-like manifestations, shock and uremia. The findings on blood chemical determination are distinguished by the fact that the alkali reserve is increased, urea and total non-protein nitrogen are increased and chlorides are quite regularly decreased. They differ from the findings in the nephritic state therefore as regards alkali reserve and chlorides. Creatinin also is likely to be increased earlier than in nephritis. Alkalosis is likely to develop much more rapidly than the nephritic state and to reach a crisis or emergency therefore in a much shorter time. As has been stated above, it is not at all dependent upon the administration of alkali and has been repeatedly observed in individuals who had received no alkali. The factors responsible for its initiation are not known and it may occur at any time and without apparent reason. Once initiated, the administration of alkali is decidedly harmful, and the administration of an excess of alkali may occasionally be responsible for its initiation. In the ma-

jority of patients in whom it has been observed on alkali therapy it has been possible to elicit a history of similar manifestations prior to being placed on alkali treatment, but there are certain well defined conditions in which alkali dosage has been observed to play a definite part in initiating the condition or aggravating it. These have for the most part apparently had to do with the administration of alkali in quantity greater than was at that time required to neutralize the free acid in the stomach contents.

The usual Sippy regime provides for hourly feedings of milk and cream with alkali powders midway between feeding in dose just sufficient to neutralize the *free* acid. This does *not* mean enough to alkalinize the stomach content or even to neutralize *all* of the hydrochloric acid secreted. The albumen of the food acts as a buffer, combining with acid as it is secreted, being split off from it when alkali is introduced and again combining with acid as more is secreted. In this way there is a variable amount of acid present in the stomach content combined with albumen as represented by the total acidity found on titration of control samples removed at various times during the day on ulcer management. This represents the margin of soluble free alkali which can be introduced over the quantity necessary to control the free acid before actually making the stomach content alkaline, and it makes possible some range in the dosage of alkali introduced without leaving an excess of free alkali in absorbable form. In the course of management whenever it is found that the free acid is not being controlled the dose of alkali is increased, sometimes to doses equal to 100 grains or more per hour if this is found necessary to control the free acidity. It is in these higher doses that the greater danger of alkalosis occurs. It has been repeatedly stated in the literature that the administration of alkali causes the stomach to secrete more acid and thereby starts a vicious circle, and series of laboratory experiments have been cited to prove this assertion. This is not, however, by any means regularly true. As a part of the plan for accurate observation of these patients I have required them to keep a daily record of the quantity of alkali necessary to control the acid. The total quantity of alkali required to neutralize the free acid offers a measure of the total quantity of acid secreted, since the quantity of food intake is uniform and the

quality is also restricted to a fairly uniform standard. Such patients furnish a laboratory experiment in the effect of alkali therapy on acid secretion covering a period of many months. It has been determined in this way that there is no uniformity in the behavior of acid secretion. Many patients do show an increase in the amount of acid secreted—some of them only very slowly and some of them quickly. In many instances this increase is followed by a decrease which may be to the original level or below it or may remain permanently above the original level. In some instances there is no change whatever; in some cases there is a temporary and sometimes a permanent decrease and in many there are alternate increases and decreases without regularity of time or level. Fortunately, in most instances these changes are gradual. It is in the failure to recognize the decrease in acid secretion that one possibility of alkalosis arises. If the patient has been taking a large dose of soluble alkali to control the free acidity and the secretion diminishes to a point where only a part of this is required, the balance is present in the stomach content in free form. In those conditions in which the hydrochloric acid secretion is suddenly arrested the entire amount of soluble alkali is thus free. This may occur in such conditions as acute infections, migraine headaches and various other conditions associated with marked nausea, etc. It may also occur as a part of the alteration in secretion which usually accompanies alkalosis itself and the powders given may thus rapidly augment an alkalosis once started. It is very important that alkalies be stopped at once when an alkalosis is discovered.

The safeguards against this condition depend, first, upon careful and rigid adherence to the principle that *only* enough alkali is to be given to control the *free* acidity and that whenever the secretion is decreased the dose of alkali should be correspondingly diminished. This may be done by trying a smaller dose of alkali whenever the combined acid in control specimens of stomach content shows a marked decrease or when no free acid is found on a number of consecutive tests. It is further safeguarded by making a considerable part of the total dose of alkali of calcium carbonate which is not soluble in water and dissolves only when free acid is present. If there is no free acid it passes through the intestine as so much inert powder and is expelled in the feces.

It does not therefore have the tendency to produce alkalosis that sodium bicarbonate does. The patient must be further safeguarded by continual alertness to recognize the early symptoms of alkalosis, by checking the findings with blood chemical determinations and promptly meeting the situation by withdrawing alkali and supplying water, glucose and chlorides. It is hardly necessary to say that the tendency to alkalosis in so far as it is due to pyloric obstruction should be lessened by appropriate surgical measures for the relief of obstruction: e.g. gastroenterostomy. After alkalosis has subsided it is usually possible to go on with alkali therapy and very often without any recurrence of the disturbance. Its occurrence does not preclude further alkali therapy. Alkalosis has occurred at some stage of treatment in 18% of my cases, but in only 2% has it prevented further alkali therapy. These figures are in accord with those of Dr. Frasier who made a series of determinations of plasma carbon dioxide on patients on ulcer treatment on the service of Dr. Sippy (1918-1919) and found values above 80 volumes per cent in 17% and above 100 in 6.25% of the cases studied.

SUMMARY

There are two outstanding dangers inherent in the alkali treatment of peptic ulcer—nephritis and alkalosis.

These dangers have been recognized as long as the present type of treatment has been used, but it remained for blood chemical studies to more clearly define their manifestations.

Nephritis must for the present at least remain a relative contraindication to rigid alkali treatment of peptic ulcer and patients of this type require the most careful study to determine the course involving the minimum risk to the patient.

Alkalosis is not necessarily dependent upon alkali therapy but may be initiated by an excess of alkali and when present is materially aggravated by the administration of alkalies. Its occurrence at one time during alkali treatment of ulcer does not necessarily preclude the use of alkali after the condition has entirely subsided.

It is most important in both of these conditions that the symptoms be promptly recognized and alkali stopped at once.

Whenever it has been demonstrated that it will not involve danger of further disturbance

alkali may be cautiously resumed, but only on condition of eternal watchfulness.

We must remember that we are not treating an ulcer but a patient who has an ulcer—and oft-times also certain other serious disease conditions or alterations of body chemistry. Treatment must not be allowed to degenerate into the performance of routine and we must be continually on the alert to recognize and avoid or meet these dangers which may be expected to occur at some time in approximately 25% of cases and to preclude rigid alkali treatment of ulcer in approximately 10% of cases.

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DISCUSSION

Dr. Samuel E. Munson, Springfield: I would like to ask the doctor how they control this acid condition so that they know how much alkali to give when the fractional meals are made and acid condition determined, particularly as to the acid curve; and if he generally determines if there is a high acid curve at the end of digestion, or at least at the time that the entire evening meal is withdrawn.

I would like also to have some evidence that large amounts of sodium bicarbonate do not have a tendency to increase the hydrochloric acid, because we know the hormones have to do with the hydrochloric acid secreted. It is probable that the amount of bicarbonate given has to do with the continued secretion of HCL acid between meals.

I have never used a very great amount of sodium bicarbonate. I think with a careful study of our cases, as we know, that there are usually different reasons for gastric or duodenal ulcer, before treatment is instituted. These reasons should be determined. And with that consideration I don't think there is a need of the great amount of sodium bicarbonate that has been used in many of these cases in the past.

I think the acid curve should always be a matter of consideration in regard to the treatment of these cases, medicinally.

Dr. Eugene J. O'Neill, Chicago: I would like to ask the essayist about the comparative value of the alkaline units derived from calcium carbonate. What is their strength as compared with other commonly used alkaline agents, for instance, sodium bicarbonate and magnesium oxide?

In view of the fact that calcium carbonate seems to be passed intact when acid is no longer present

in the gastro-intestinal tract and thus does not tend to produce alkalosis, are there any other dangers to be encountered in giving large doses of this drug within reasonable bounds?

Dr. L. C. Gatewood (closing): Dr. Munson's question: How do you know how much alkali is required; whether by the result of fractional meals or other methods of determination?

It is not ordinarily necessary to use a fractional meal because we start with an amount of alkali which is at the lower limit of the average individual's requirement. The average individual on that amount will show free acid and we will have to increase the dose. If he does not show acid, decrease the amount of alkali. We determine the level on actual management, increasing or decreasing, until we strike the proper level. We could estimate our starting point only a little close with the fractional meal and for practical purposes this is not necessary. The fractional meal is of very considerable value in certain diagnostic work but not for this particular purpose.

How do we know that the alkali does not cause higher acid secretion? That was explained briefly in the paper. Given a standard quantity and type of food on management and knowing the amount of alkali given in a day to exactly neutralize the acid secreted, the amount of alkali is the equivalent of the acid secreted.

I have had the records kept by these patients so that I could check over from time to time the actual fact of what has occurred and have accumulated a great many of these records.

Here is the memorandum from the chart of one patient who on August 9, required the equivalent of 50 grains per hour to control the acid. On September 13, that had decreased to 40; December 12, to 30; February 16, to 20. At the present time, since April 24, that patient's acidity has been controlled on 10 grains per hour. The patient is a girl 24 years old and there is no question of carcinoma or other of the conditions usually causing decreased secretion. Here is the record of another which has varied from 50 to 10; another from 50 down to 30; up to 40; down to 20; back up to 30, and so on. Here is another which has gone down at one time to 0 and then up again. This patient was one I had had under observation previously. I advised resection and the patient refused. She is now on ulcer management, not necessarily because it is the best treatment for her. She was at one time without hydrochloric acid secretion for 12 weeks. After that, acid secretion returned and again disappeared for a short time and then returned and remained constant for a period of months, requiring about 50 grains per hour to control it. While these figures are stated in terms of sodium bicarbonate, much of the alkali used is given in the form of calcium carbonate.

Ten grains of calcium carbonate is approximately equal to 20 grains of sodium bicarbonate. The exact figures are given in the article by Shattuck to which I have already referred. No calcium carbonate, when

there is no free acid, goes through unchanged and can therefore be used in large quantities in those conditions in which we cannot safely put in a stomach tube to determine whether or not acidity is being controlled as, for example, following hemorrhage. In an individual who has nephritis it may give rise to retention, just as the other alkalis may. I have seen one instance in which an individual with a previous nephritis coming into the hospital with an acute hemorrhage and being put on management with calcium carbonate—given sodium bicarbonate and enough calcium carbonate to know the acid was being controlled—ran up to a blood urea of 180 and began to show symptoms of uremia before the condition was discovered. Calcium carbonate is not free from the dangers of the other alkalis in nephritis. On the other hand, it does not have as much tendency to produce alkalosis as the other.

THE PROGNOSIS OF SYPHILIS

FORDYCE, in the *American Journal of the Medical Sciences* for September, 1923, in summarizing his article, says the future of the syphilitic patient depends upon the knowledge and training of the physician first consulted. If, familiar with modern diagnostic methods he will not neglect the employment of the dark-field microscope. A search for the treponemata may be rewarded by an examination of the fluid aspirated from the communicating lymph nodes after failure to demonstrate the organism in the primary sore. When the diagnosis is made the physician should impress the patient with the necessity for vigorous and thorough modern treatment and endeavor to make him appreciate the seriousness of the disease.

Mercury by mouth is a desultory way and is of no value in aborting the infection. Many patients receive insufficient treatment because physicians have not acquired accurate knowledge of the modern specific drugs and are ignorant of their proper administration. The criticism is as valid now with our greater knowledge as formerly before our modern studies of the disease. The fault to-day lies not only in the lack of training on the part of the physician, but also in his failure to impress the patient with the necessity of continuing treatment long after the symptoms have disappeared. All physicians treating syphilis should have a thorough knowledge of the pathology of the disease and its possibilities in the early as well as the late stages.

In the primary stage, before the Wassermann reaction becomes positive, a cure generally may be assured by intensive treatment. At least two courses of eight doses each of arsphenamine and two courses of 15 injections each of mercury should be given. Continued observation and control by the Wassermann test and lumbar puncture are necessary as in the treatment of later stages.

In the secondary stage, after the Wassermann reaction has become positive, a cure is not so readily obtained, but is possible if treatment is thorough and

not stopped as soon as the blood becomes negative. The positive reaction continues as a rule for some time after all the other symptoms have disappeared. Depending on the length of time the blood has been positive, patients should receive from two to three courses of arsphenamine and three or more courses of mercury. If the spinal fluid is positive, more treatment may be required, including intraspinal injections. Cure should be pronounced only after a long period of observation. A guarded prognosis should be given when the disease has progressed beyond the early secondary stage.

A symptomatic cure is possible in latent and tertiary stages if adequate treatment has been given, even in so-called "Wassermann-fast" cases. Adequate treatment means the administration of not less than two to four courses of arsphenamine combined with and followed by mercury, iodides, and mixed treatment. In the so-called "Wassermann-fast" cases an examination of the spinal fluid is imperative.

The progress is not favorable in certain types of neurosyphilis. This statement applies especially to the degenerative stages of tabes and paresis. It is, however, possible to anticipate and arrest the progress of early active tabes and paresis. The majority of cases do not respond to treatment as ordinarily administered. Early cases of neurosyphilis which do not respond to intravenous treatment combined with mercury are generally cured by intraspinal treatment. Paresis and tabes result from neurosyphilis improperly treated in the early stages.

In congenital with syphilis, the old methods of treatment it was impossible to obtain a negative Wassermann reaction, and even now the prognosis is not as favorable as in the acquired disease because of the severity of the infection, interference in the development of the growing tissues, and the difficulty of carrying out the treatment.

In congenital syphilis with involvement of the central nervous system, because of the technical difficulties in treatment the prognosis is less favorable than in the similar type of syphilis in adults.

It is frequently necessary to give a prognosis because of contemplated matrimony. While a rigid standard cannot be maintained physicians should endeavor to obtain a negative Wassermann reaction in the blood for one or two years after adequate treatment, with a negative spinal fluid, before giving consent. The patient should remain under observation for several years. If the patient be a woman with a positive Wassermann reaction, treatment should be begun during early pregnancy and continued throughout.

Marriage may be permissible in spite of a positive blood Wassermann if thorough treatment has been administered. In exceptional cases after prolonged treatment and after the expiration of at least five years from the time of the infection and two years' freedom from all symptoms, a conditional consent to matrimony may be given.

The marriage of heredo-syphilitics with the disease still active is not desirable, even though the

danger of transmission of infection to the third generation is negligible.

We must remember that untreated or imperfectly treated syphilis is essentially a relapsing disease. In thoroughly treated cases, however, the prognosis is favorable.

The modern criteria of cure are dependent on: (1) Adequate treatment; (2) a negative Wassermann reaction, for at least a year after cessation of all treatment, which continues negative after a provocative injection of arsphenamine; (3) a negative spinal fluid; (4) negative findings in the cardiovascular system. The early involvement of the cardiovascular apparatus may be followed by changes in the heart and aorta with a negative Wassermann reaction.

In this paper, which is more or less fragmentary and incomplete, many factors which influence the prognosis of syphilis have not been touched upon. Fordyce would like to suggest to those who treat syphilis to acquaint themselves more accurately with the possible toxic effects of the modern arsenicals. Has the hypertension which is at times met with after prolonged treatment any relation to the known toxic action of arsenic on the blood-vessels? How long is arsenic stored in the liver after the cessation of our usual courses of the drug? Can jaundice be prevented by a non-protein diet during treatment? Is the elimination of arsenic hastened by the simultaneous use of the iodides? To what extent do our various methods of giving arsphenamine develop arsenic-fast strains of the treponemata and thus render our further therapeutic attacks less efficient?

An old negro preacher was making a visit at the revenue warehouse.

Revenue Officer: "What'll it be, Erasmus?"

Erasmus: "Ah wants some sacrilegious wine."

Revenue Officer: "Some sacrilegious wine? You mean sacramental wine, don't you? And what kind do you want?"

Erasmus: "Well, boss, at last Sunday's meetin' the coongregation took a vote, and it was unanimous for gin."

BE A LIVE ONE

If you think your society the best,

Tell 'em so;

If you would have it lead the rest,

Help it grow.

When there's anything to do,

Let them always count on you,

You'll feel good when it is through,

And that's so.

If you're used to giving knocks,

Change your style—

Throw bouquets instead of rocks

For a while.

Let the other fellow roast—

Shun the No-Bill like a ghost,

Meet his banter with a boast

And a smile.

When a Brother from afar
Comes along—
Tell him who and what you are—
Make it strong.
Never flatter—never bluff,
Tell the truth, for that's enough,
Be a booster—that's the stuff.
Don't Just Belong.—*Exchange.*

Society Proceedings

ADAMS COUNTY

The regular meeting of the Adams County Medical Society was preceded by a dinner at the Elks' Club at 6:00 P. M., November 9, 1925, given in honor of our guest Dr. R. Robinson Duff of Chicago. There was an attendance of 20 physicians at the dinner.

The meeting of the society was called to order at 8:20 P. M. by the President, with thirty-nine members and six guests present.

R. Robinson Duff, M. D., F. A. C. S., Surgeon for the Central Manufacturing District of Chicago, gave a very interesting paper on, "The Management of Common Fractures." Various unique methods of reducing fractures together with demonstrations in the application of splints, calipers, etc., to the more common fractures were shown. This was one of the most practical and interesting papers that the society has enjoyed for a long time. Dr. Duff's paper was given a very extensive discussion and many questions asked. Those taking part in the discussion were Drs. Irwin, Nickerson, Jurgens, Koch, Williams, Miller, Montgomery, Swanberg, Wells, Pfeiffer, Bates, Pollock, and Center, the discussion finally being closed by Dr. Duff. Dr. Dickerson made a motion that we extend Dr. Duff a rising vote of thanks in appreciation of his coming to Quincy to address the society. Seconded and carried.

Two brief case reports were presented by Drs. Melinda Germann and R. A. Harris.

The Secretary read a letter of acknowledgment for flowers sent to the funeral of our deceased member, Dr. Groves, also a letter from Dr. George accepting the Honorary Membership in the Adams County Medical Society, which had been granted him. Dr. Nickerson made a motion that a page of the minutes be set aside for a short biography of our deceased member, Dr. W. D. Groves. Seconded and carried. Dr. Wells made a motion that the Secretary be instructed to send to the Board of Health a copy of the resolution that was passed by this society some time ago in regard to our stand in the matter of clinics. Seconded and carried. The application of Dr. O. C. Church for membership in the society was read and ordered turned over to the Board of Censors. Dr. H. S. Maupin was elected a member of the society.

The meeting adjourned about 10:45 P. M.

HAROLD SWANBERG, M. D.,
Secretary.

COOK COUNTY

*Joint Meeting Chicago Medical and Chicago
Tuberculosis Societies, Nov. 18, 1925*

The Noticeable Parallelism and Similarity Between Leprosy and Tuberculosis—Oswald E. Denny, Carville, Louisiana; John Ritter.

Discussion—Dermatological Standpoint, Wm. Allen Pusey; Tuberculosis Standpoint, Maurice Lewison.

Regular Meeting, Dec. 2, 1925

1. Ulcer and Carcinoma of the Stomach and Duodenum—Their Recognition and Surgical Management, Arthur Dean Bevan.

Discussion—Medical Standpoint, Donald P. Abbott; Surgical Standpoint, Alfred Strauss.

2. Complications of Peptic Ulcer and Their Surgical Treatment, Karl A. Meyer.

Discussion—Walter Palmer.

Marriages

CLARENCE GEORGE FISCHER to Miss Madeline Cashin, both of Peoria, Ill., October 6.

JAMES EDWARD FITZGERALD, Chicago, to Miss Dorothy Dow of Lockport, Ill., November 3.

WILLIAM L. MCBRIEN to Miss Mollie Sturm, both of Staunton, Ill., at Lincoln, October 1.

Personals

Dr. Max L. Folk has been appointed associate in ophthalmology at the Michael Reese Hospital.

States Attorney Robert E. Crowe addressed the Englewood Branch of the Chicago Medical Society, November 3, on "The Doctor and the Law."

Dr. Anna H. McFarland Sharpe, formerly of Jacksonville, has been appointed physician to the College of Women, Tallahassee, Fla.

Dr. Arno B. Luckhardt, professor of physiology, University of Chicago, addressed the International Acetylene Association at the Congress Hotel, November 19.

Dr. Arlington Ailes, formerly health officer of Shelby County, Ohio, has been appointed full-time officer for LaSalle, Oglesby and Peru, to succeed Dr. Edmund W. Weis.

Dr. Maurice L. Blatt addressed the Physicians'

Fellowship Club, Logan Square Masonic Temple, November 20, on "Physical Examination of Infants and Young Children."

A dinner was given in honor of Dr. Robert H. Babcock by his medical friends at the Drake Hotel, November 10th.

Sir W. Arbuthnot Lane, London, addressed the Chicago Surgical Society at its regular meeting, November 6, at the University Club, on "Chronic Intestinal Stasis," and Dr. Donald C. Balfour, Rochester, Minn., on "Disabilities Following Gastro-Enterostomy." The regular clinical meeting of the society began at 9 o'clock at Michael Reese Hospital.

Dr. Thomas W. Rhodes, Cleveland, has accepted the position of health officer of the Quincy public health district, according to the Quincy *Whig-Journal*. Dr. Rhodes was formerly connected with the New York State Department of Health, was health officer at East Liverpool, Ohio, served in the World War and later was on duty at the Marine Hospital, Cleveland.

Dr. A. E. Mowry delivered an address at the monthly staff meeting of the Illinois Social Hygiene League, 952 North Clark St., Chicago, Nov. 9th, subject, "Some Sidelights on Gonorrhoea."

Dr. Edwin P. Sloan, of the Sloan Clinic, Bloomington, has established an office at 25 East Washington Street, Chicago, for the treatment of goiter.

A personal item in the October JOURNAL stated that Dr. Duke R. Gaskins of Harrisburg, had been appointed chief surgeon and manager of the Union hospital at West Frankfort. Dr. J. E. Williams informs us that he is chief surgeon and that Dr. Gaskins is superintendent of the hospital.

News Notes

—The North Chicago Hospital, 2551 North Clark Street, is planning a four-story addition to its building.

—The Western Suburban Hospital, Oak Park, has contracted for a \$450,000 addition.

—"Hillerest," the Adams County Hospital, Quincy, will erect a fifty-bed addition to cost \$30,000.

—The National Research Council has granted the University of Chicago \$10,300 for the support of work on the biology of sex under Prof. Frank R. Lillie, Ph.D., and Assistant Prof. Carl R. Moore, Ph.D.

—Following the discovery of two cases of smallpox in Oak Forest Infirmary, the institution was placed under quarantine until November 19, and the 4,000 persons who make their home there were vaccinated.

—Members of the Chicago Medical Society gave a dinner, November 18, in honor of Dr. Oswald E. Denney, chief medical officer, U. S. Public Health Service, National Leprosarium, Carville, La., who addressed a joint meeting of the society with the Chicago Tuberculosis Society that evening.

—The late Miss Helen Culver bequeathed \$600,000 to the University of Chicago for the further development of biologic science. Miss Culver gave the university \$1,000,000 in 1895 to endow and equip a biologic department. Her recent bequest is not included in the university's \$17,500,000 development program.

—The second Ludvig Hektoen lecture of the Billings Foundation was given, November 27, before the Institute of Medicine of Chicago by Dr. Edward Francis, director, Hygienic Laboratory, U. S. Public Health Service, Washington, D. C., whose subject was "Tularemia." The sixth Pasteur lecture of the Institute of Medicine has been postponed until January.

—There was a reception at the Chicago Athletic Club, November 4, in honor of Sir William Arbuthnot Lane and Mr. Philip Franklin, London, England, and a dinner given by the officers of the Chicago Medical Society previous to the general meeting in the Marshall Field Annex. The subject of the address of Sir W. Arbuthnot Lane was "Present Treatment of Fractures," and that of Mr. Philip Franklin, "Newer Developments in Laryngology."

—As a contribution from Rush Medical College Alumni to the development fund of the University of Chicago, a committee of physicians throughout the country has been organized, under the leadership of Dr. Ralph W. Webster, Chicago, to raise \$250,000. Rush Alumni have already contributed \$155,000

toward this fund. During Dr. Webster's absence in Japan with the University of Chicago baseball team, Dr. Wilber E. Post, Chicago, is in charge of the campaign.

—Dr. Ludvig Hektoen, head of the department of pathology, University of Chicago, since 1901, Prof. Albert A. Michelson, Ph.D., head of the department of physics since the founding of the university, and Dean Albion W. Small, Ph.D., head of the department of sociology and anthropology since 1892, are resigning as executive heads of their departments, and their places will be taken by Dr. H. Gideon Wells, Prof. Henry G. Gale, Ph.D., and Prof. Ellsworth Faris, Ph.D.

—Following affiliation with Loyola University, St. Bernard's Hospital has reorganized its staff with Dr. William S. Hector, chief of the surgical staff, Dr. Joseph P. Smith, chief of the medical staff; Dr. Emil A. Rach, in charge of the obstetrical division; Dr. Jared C. Hepburn, chief of the gynecologic staff; Dr. Bertram C. Cushway, in charge of the radiologic department, and Dr. Sydney S. Schochet, director of the pathologic laboratories.

—The psychology department of Northwestern University will supervise a free clinic at Evanston at the old college building, south campus, for the examination of persons mentally deficient and of cases of emotional and behavior disorders, on Thursday afternoons. It will be at the disposal of Evanston's public schools, hospitals, police department and social service agencies. The clinic will be separate from the routine of the university and will be a branch of the clinic in Chicago. Dr. Herman M. Adler, director, Institute of Juvenile Research, will cooperate in providing the service of a psychiatrist.

—There were fourteen counties in Illinois with a population of about 300,000 in which no case of syphilis was reported in the last fiscal year, and ten counties with about 300,000 population from which no case of gonorrhea was reported, and there were less than 1,000 of the 5,000 physicians in the state outside Chicago who reported any case of venereal disease; yet, according to the state department of health, there were 31,254 cases of venereal disease reported in the year, of which 10,981 were syphilis

and of these 8,457 were from Chicago. The case reports are probably far from complete. The total number reported last year averages about 100 cases daily.

—Dr. Edward H. Hatton, professor of pathology, Northwestern University Dental School, and special research investigator of the American Dental Association, addressed the Chicago Ophthalmological Society by invitation, November 16, at the Hotel Sherman, on "The Dental Factor in the Etiology and Treatment of Iritis." Dr. Wendell C. Phillips, New York, President-Elect, and Dr. Charles W. Richardson, Washington, D. C., Trustee, of the American Medical Association, were guests of honor at the meeting of the Chicago Laryngological and Otolological Society, Hotel Sherman, November 19. Dr. George E. Shambaugh presented a statistical study of the 290 children in the Chicago public schools for the deaf and speak on "Congenital and Acquired Deafness—Partial and Total Defects, Vestibular Responses, Consanguinity as a Cause for Deafness."

—An examination was held by the American Board of Otolaryngology on October 19, 1925 at the Cook County Hospital, Chicago, with the following result:

Passed	120
Failed	23
<hr/>	
Total Examined	143

The next examination will be held in Dallas, Texas, on April 19, 1926. Applications may be secured from the Secretary, Dr. H. W. Loeb, 1402 South Grand Boulevard, St. Louis, Missouri.

—The council of the Chicago Medical Society adopted the following resolution at its regular meeting, November 10:

WHEREAS, The American Public Health Association at its annual meeting in St. Louis, in October, 1925, listened to an address by one of its members, favoring a new doctor in each community where a health officer is needed, to be known as a Doctor of Public Health, and

WHEREAS, Several institutions of learning have introduced courses in public health whereby a layman as well as a physician may be instructed and in a comparatively short time qualify as a Doctor of Public Health (D. P. H.)

and be allowed to advise, qualify and practice preventive medicine, and

WHEREAS, In all probability a bill to license a so-called D. P. H. will be introduced into the next session of the state legislature of Illinois, and

WHEREAS, The Chicago Medical Society believes that all health officials should first be physicians (M. D.), who have the proper knowledge of the sciences concerned in public health, and that such knowledge cannot be gained by any layman in two or three years, and

WHEREAS, Such an arrangement of a layman being a health official places a double expense on the community, since it is necessary for the community to then procure the service of an M.D., in addition to a layman, and

WHEREAS, the state confers on an M. D. the right to practice medicine and surgery in all its branches, while the special licensing of a D. P. H. would be special legislation tending to take from an M. D. that right. Therefore be it

Resolved, That the Chicago Medical Society believes all positions of trust pertaining to public health in any community should be held by physicians (M. D.) and not by laymen holding D. P. H. licenses, and be it further

Resolved, That the Chicago Medical Society views with displeasure any move on the part of the American Public Health Association which may express a desire to replace physicians as health officials by laymen with D. P. H. licenses, and be it further

Resolved, That a copy of this resolution be sent to the American Public Health Association; to all those institutions of learning where courses in public health are given with a view to conferring a D. P. H. degree, and to every state medical society with a request that their component county societies be made acquainted with the proposed activities of a public health association, whose president is a layman.

Deaths

EDWARD V. ANDERSON, Woodstock, Ill.; Rush Medical College, Chicago, 1871; aged 77; died, October 31, at Riverside, Calif.

J. EZRA BLANCHARD, Ozark, Ill.; Eclectic Medical Institute, Cincinnati, 1895; aged 54; died, October 12, of carcinoma.

SAMUEL B. BOGAN, Salem, Ill.; Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville, 1885; aged 72; died, October 26, of influenza.

MARSHALL CASSINGHAM, Wilmington, Ill.; Rush Medical College, Chicago, 1875; Civil War veteran; aged 84; died, October 29.

GEORGE H. CHAPMAN, Chicago; Rush Medical College, Chicago, 1874; member of the Illinois State Medical Society; local surgeon to the Illinois Railway; aged 74; died, November 1, of pneumonia.

ALEXANDER M. CHENEY, Jerseyville, Ill.; Gross Medical College, Denver, 1895; aged 57; died, October 28, of cerebral hemorrhage.

JOSEPH FORRESTER, Chicago; Jefferson Medical College of Philadelphia, 1891; a Fellow A. M. A.; on the staff of the Chicago General Hospital; aged 64; died, November 16.

ELLEN F. TAFT GRIMES, Decatur, Ill.; Woman's Medical College of Pennsylvania, Philadelphia, 1876; aged 77; died, November 2, at New York, of pneumonia.

WILLIAM D. GROVES, Ursa, Ill.; Missouri Medical College, St. Louis, 1883; member of the Illinois State Medical Society; aged 62; died, October 24, at St. Mary's Hospital, Quincy, of heart disease.

ANNA M. A. HAHN, Chester, Ill.; Homeopathic Medical College of Missouri, St. Louis, 1900; Hahne-mann Medical College and Hospital, Chicago, 1901; died, October 12, following a long illness.

ELWOOD WENDELL LEWIS, Chicago; Jenner Medical College, Chicago, 1914; aged 35; died, August 12, of acute nephritis.

WILLIAM STEWART I. McDOWELL, Chicago; Northwestern University Medical School, Chicago, 1891; member of the Illinois State Medical Society; on the staffs of the Washington Park and German Deaconess hospitals; aged 67; died, October 21, of organic heart disease.

IRA F. PALMER, Onarga, Ill.; Eclectic Medical Institute, Cincinnati, 1872; Civil War veteran; aged 80; died, October 21, at Rochester, Minn.

LAWRENCE EDWARD B. RISPIN, Chicago; Loyola University School of Medicine, Chicago, 1918; aged 42; died, June 5, at Berwyn, Ill., of carcinoma of the liver.

EDWIN H. SMITH, Chicago; McGill University Faculty of Medicine, Montreal, Que., Canada, 1884; aged 62; died, November 15, of carcinoma.

THEODORE E. WALKER, Rantoul, Ill.; Medical College of Indiana, Indianapolis, 1880; aged 80; died, October 24, of senility.

FREDERICK WALLACE WILCOX, Minonk, Ill.; Rush Medical College, Chicago, 1886; a Fellow A. M. A.; aged 61; died, November 7, of cerebral hemorrhage.

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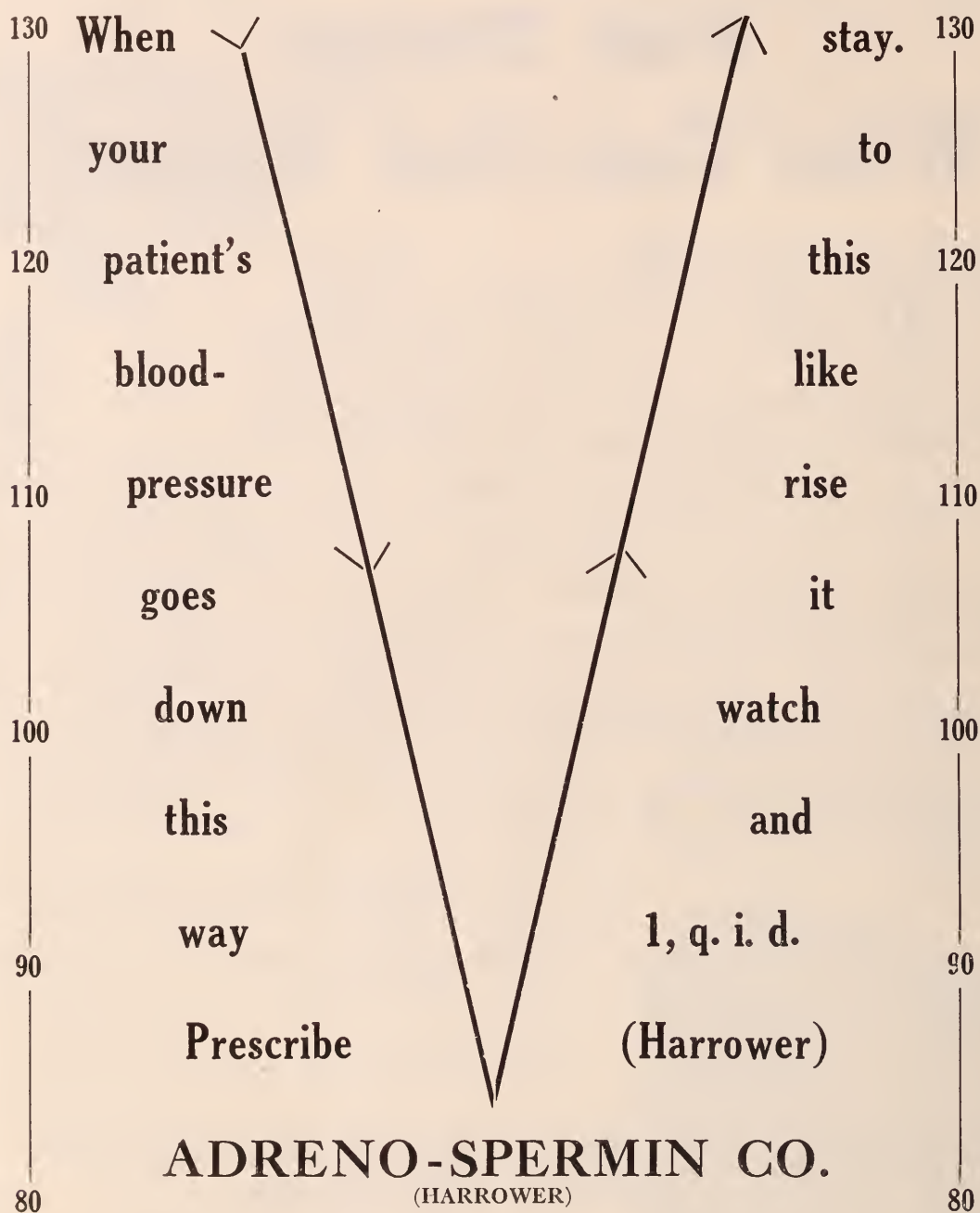
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Zinc Oxide 80 parts
Mix. Triturate well.
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Bismuth subcarbonate300 parts
Zinc Oxide300 parts
Zinc Stearate200 parts
Mix. Triturate well.



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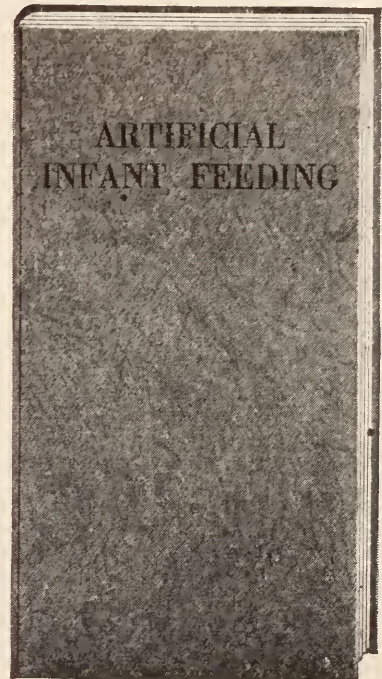
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Book Reviews

THE DENTISTS' OWN BOOK. A Faithful Account of the Experiences Gained During Forty-six Years of Dental Practice. By C. Edmund Kells, D. D. S., New Orleans, La. With 16 illustrations. St. Louis, C. V. Mosby Company. 1925. Price, \$7.50.

THE PRACTICAL MEDICAL SERIES. Volume V. Gynecology. Edited by Thomas J. Watkins, M. D. Obstetrics edited by J. B. Delee, M. D. Series 1924. Chicago. The Year Book Publishers. Price, \$2.00.

The editor states that the literature in Gynecology for the year reflect stabilization. It shows much decrease in aviation in Endocrinology, and more moderate—and probably just—claims for radium and X Ray.

CLINICAL FEATURES OF HEART DISEASE AND INTERPRETATION OF THE MECHANICS OF DIAGNOSIS FOR PRACTITIONERS. By Le Roy Crummer, M. D., New York. Paul B. Hoeber, Inc., 1925. Price, \$3.00.

This book is the result of experience gained by the author in the world war. In the work the author hopes to show that first, a diagnosis of valvular heart disease does not imply imminent or sudden death. Second, decomposition is a diagnosis which should be

made early, and only a minor portion of this diagnosis is made from physical signs.

MEDICAL AND SURGICAL REPORT OF THE ROOSEVELT HOSPITAL, NEW YORK. Second Series, 1925, based on the work of the years 1915-1924, inclusive. New York. Paul B. Hoeber, Inc., 1925. Price, \$5.00.

THE ESSENTIALS OF HEALTHFUL LIVING. By William S. Sadler, M. D. New York. The Macmillan Company. 1925. Price, \$3.50.

In this volume the author deals with the practical methods of preventing disease by the regulation of one's personal health practices together with the proper observance of the principles of community and public hygiene.

INDUSTRIAL POISONS IN THE UNITED STATES. By Alice Hamilton, M. D. New York. The Macmillan Company. 1925. Price, \$5.00.

There has been an enormous increase in recent years among medical men for knowledge for information on industrial toxicology.

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(Continued on page 29)

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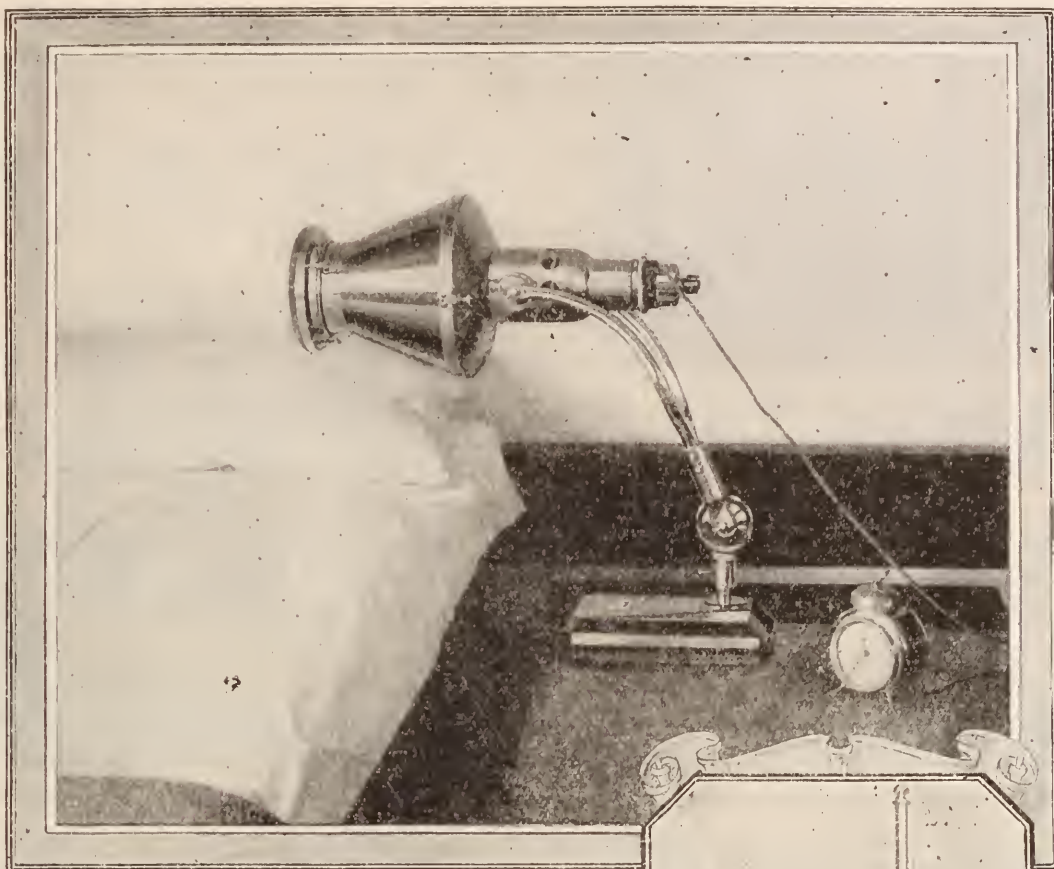
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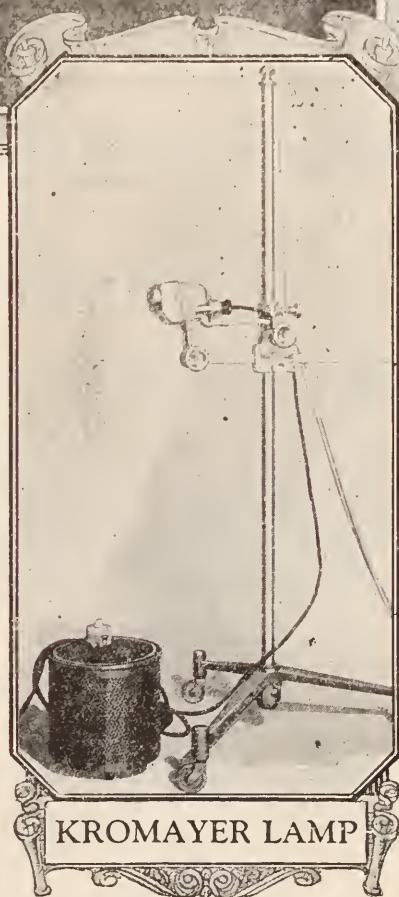
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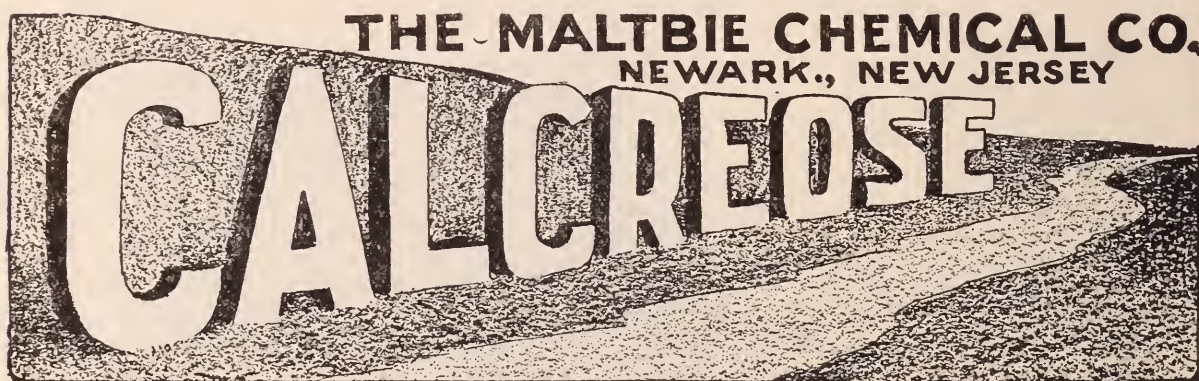
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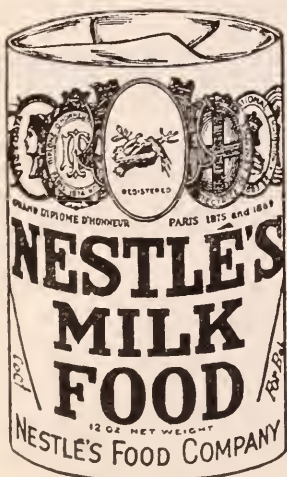
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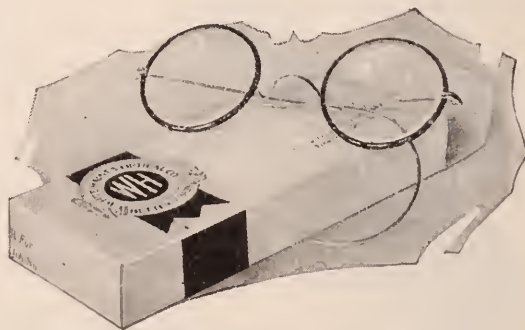
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Book Reviews

ABT'S PEDIATRICS. By 150 specialists. Edited by Isaac A. Abt, M. D., Professor of Diseases of Children, Northwestern University Medical School, Chicago. Set complete in eight octavo volumes totaling 8,000 pages, with 1,500 illustrations, and separate Index Volume free. Now ready—Volume VII containing 879 pages, with 70 illustrations. Philadelphia and London: W. B. Saunders Company, 1925. Cloth, \$10.00 per volume. Sold by subscription.

Of this exhaustive work on diseases of children, three volumes have been reviewed, and volume four is now before us. This volume treats of several subjects. Diseases of the Respiratory System, The Circulatory System, The Blood, The Endocrines and Diseases of Urinary System. The section on the Pleura and Lungs is prepared by Henry Heiman, M. D., of New York City. Tumors and Cysts of the Lungs, by Oscar T. Schultz, M. D., of Chicago. Surgery of the Thorax, by Ewart A. Graham, M. D. Mediastinal Tumors, by Clifford G. Grulee, M. D., of Chicago.

As introductory to the section on Diseases of the Circulatory System, Dr. Carl John Wiggers presents a chapter on the Physiology of the Circulation. The Physical Examination of the Heart in Normal Children, by Max Seham, M. D., of Minneapolis. The same author prepared the chapter on Congenital Heart Malformations, also on Electrocardiography in Chil-

dren. Acquired Diseases of the Heart, by Murray H. Bass, M. D., of New York City, also Diseases of the Blood Vessels.

The section of Diseases of the Blood is introduced by a chapter on The Physiology of the Blood, by Drs. William Palmer Lucas and E. C. Fleischner of San Francisco and also the chapters on The General Treatment of Anemias.

We have included some of the names of the distinguished authors who have contributed chapters to this great work. The contributions not mentioned are equally known in this field of medicine.

THE INTERNATIONAL MEDICAL ANNUAL. A year book of treatment and practitioners index forty-third year. New York. William Wood & Company. Price, \$6.00.

This volume has followed the general line laid down in the previous issue. The contributors to this volume are men of reputation, many of them internationally known.

THE PRINCIPLES OF PUBLIC HEALTH ENGINEERING. By Earle B. Phelps, M. D. New York: The MacMillan Company. 1925. Price, \$3.00.

This book is intended to furnish the public health background to the conventional sanitary engineering course and an engineering viewpoint to the medically trained man along public health work.

(Continued on page 33)

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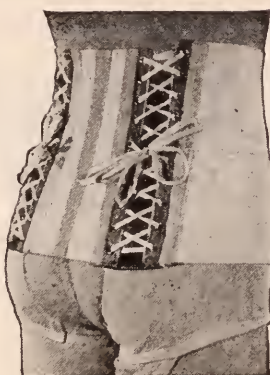
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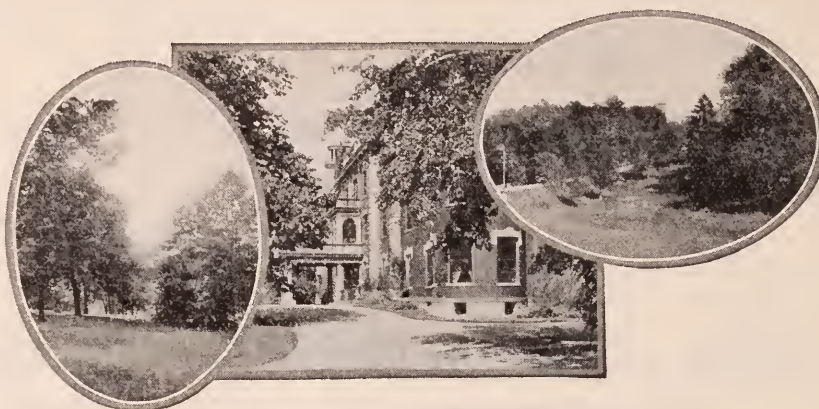
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ABT'S PEDIATRICS. By 150 specialists. Edited by Isaac A. Abt, M. D., Professor of Diseases of Children, Northwestern University Medical School, Chicago. Set complete in eight octavo volumes totalling 8,000 pages with 1,500 illustrations, and separate Index Volume free. Now ready—Volume V containing 865 pages with 373 illustrations. Philadelphia and London, W. B. Sanders Company, 1924. Sold by Subscription.

The contributors to volume 5 are Drs. H. R. Carter, Frederik G. Dyas, Albert H. Freiberg, Torr Wagner Harmer, Victor G. Heiser, Charles M. Jacobs, Philip C. Jeans, William Krauss, Leo Mayer, Edward C. Mitchell, Wade Wright Oliver, Archer O'Reilly, H. Winnett Orr, D. B. Phenister, John Ridlon, Edwin Wraner Ryerson, Lewis W. Sauer, Henry Larned Keithshaw, James Persons Simonds, Arthur Steindler, Fritz Bradley Talbot, James E. M. Thomson, Borden S. Veeder, Paul G. Woolley.

THE CRIPPLED HAND AND ARM. By Carl Beck, M. D. 302 illustrations. Philadelphia and London. J. B. Lippincott Company. Price, \$7.00.

This is a monograph of the various types of deformities of the hand and arm, as a result of abnormal development, injuries and disease, for the use of the general practitioner and surgeon.

THE SURGICAL CLINICS OF NORTH AMERICA. (Issued serially, one number every other month.) Volume V, Number II (New York Number—April, 1925). 337 pages with 105 illustrations. Per clinic year (February, 1925 to December, 1925). Paper, \$12.00; Cloth, \$16.00 net. Philadelphia and London. W. B. Saunders Company.

The contributors to this number are Doctors Albee, Eggers, Erdmann, Farr, Fries, Heyd, Meyer, Pool, Stetten, Stookey, Ward, Whipple, Yankauer.

RECOVERY RECORD FOR USE IN TUBERCULOSIS. By Gerald B. Webb, M. D., and Charles T. Ryder, M. D. Second Edition Revised. New York. Paul B. Hoeber. 1925. Price, \$2.00.

This work is in four volumes, the first volume dealing with the record of recovery; the second with the technique of recover; the third with the hygiene of recovery, and the fourth with accidents and obstacles of recovery together with chart sheets.

THE CONQUEST OF CANCER. By H. W. S. Wright, with an introduction by F. G. Crookshank, M. D. New York: E. P. Dutton & Company. Price, \$1.00.

Dr. Wright presents the subject in non-technical language. It is intended to promote better co-operation between the public and medical profession in the handling of the cancer problem and he shows by actual statistics, the high percentage of cures that have been effected when that co-operation has been prompt and intelligent.



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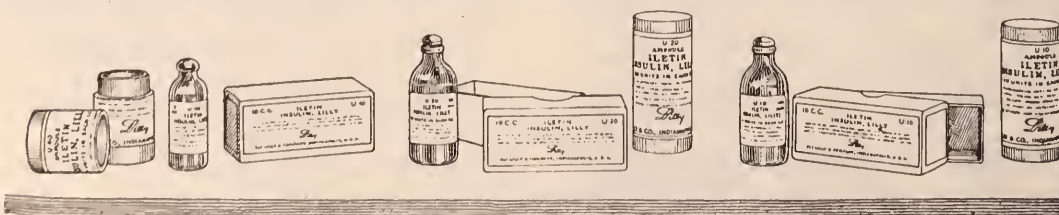
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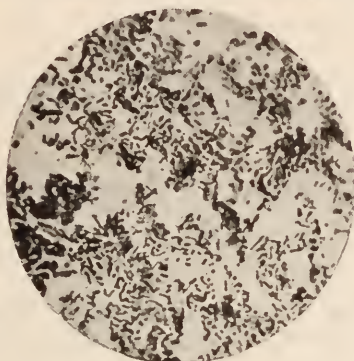
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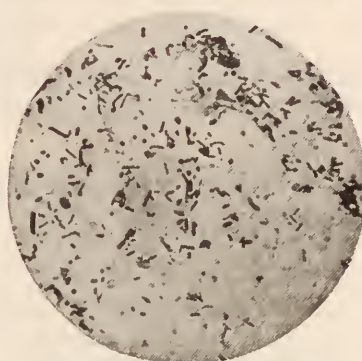
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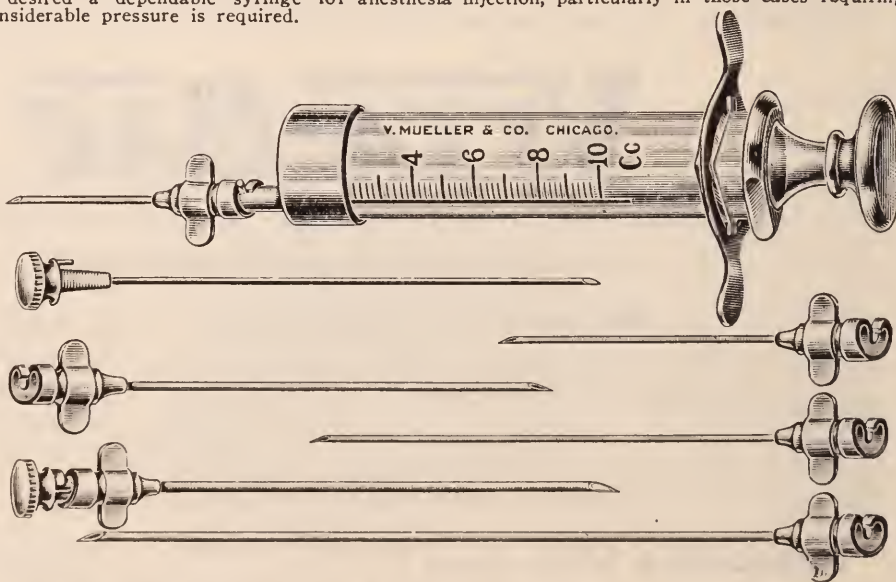
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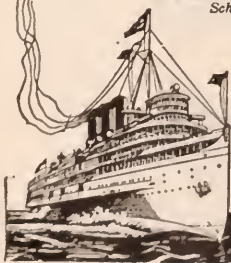
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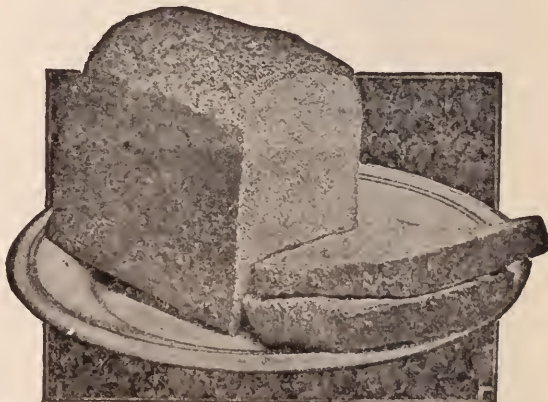
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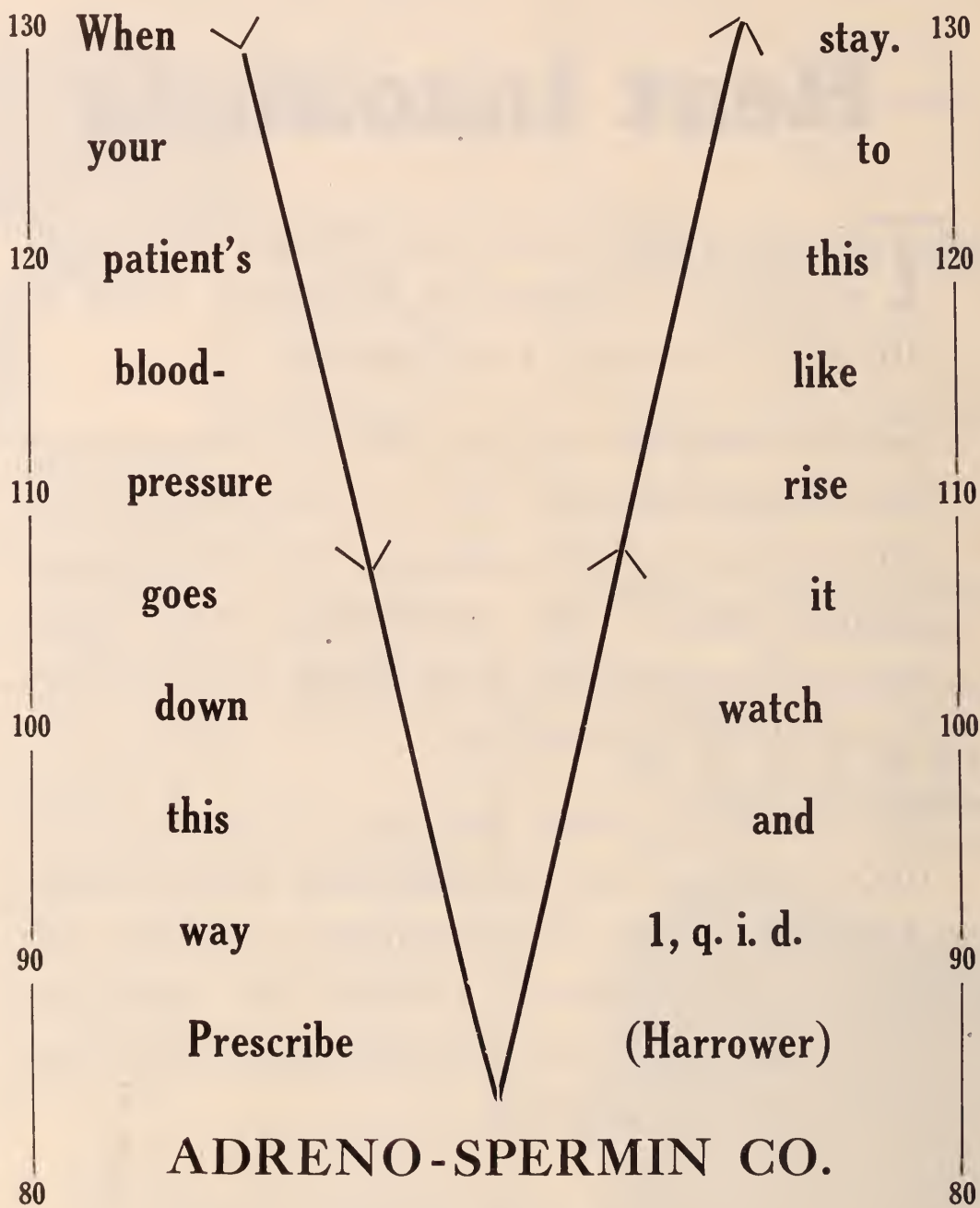
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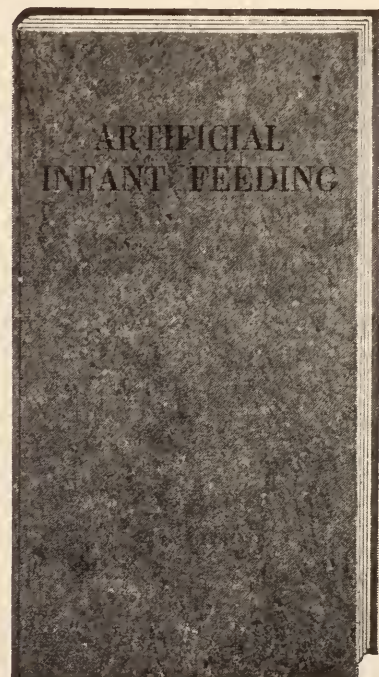
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Book Reviews

PHYSICAL DIAGNOSIS OF DISEASES OF THE CHEST. By Joseph H. Pratt, A. M., M. D., and George E. Bushnell, Ph.D., M. D. Octavo of 522 pages with 166 illustrations. Philadelphia and London. W. B. Saunders Company, 1925. Cloth, \$5.00 net.

This work emphasizes the important special senses in making diagnosis and the methods of examination are described in sufficient detail to enable the reader to utilize them fully in the study of his cases. Present day practitioners seem to realize the importance of the seeing eye, the trained finger and the educated ear and are not appreciative of the fact that these aids are worth more to the examiner than all the instrumental means of diagnosis.

THE SURGICAL CLINICS OF NORTH AMERICA (Issued serially, one number every other month.) Volume V, Number III (Mayo Clinic Number—June, 1925.) 260 pages with 115 illustrations. Per clinic year. February, 1925, to December, 1925.) Paper, \$12.00; Cloth, \$16.00 net. Philadelphia and London. W. B. Saunders Company.

The contributors to this number are Doctors Adson, Anderson, Balfour, Bollman, Buie, Bumpus, Gipner, Harrington, Henderson, Herbst, Hunt, Judd, Lillie, Lundy, MacCarty, Mann, Masson, Mayo, Meyerding,

Morse, New, Parker, Pemberton, Plankers, Scholl, Sistrunk and Walters.

THE MEDICAL CLINICS OF NORTH AMERICA. (Issued serially, one number every other month.) Volume IX, Number I (St. Louis Number, July, 1925.) Octavo of 275 pages with 67 illustrations. Per clinic year (July, 1925, to May, 1926.) Paper, \$12.00; Cloth, \$16.00 net. Philadelphia and London. W. B. Saunders Company.

The contributors to this number are Doctors, Barnes, Baumgarten, Brady, Engelbach, Graves, Hartman, Hempelmann, Luten, Lyter, Marriott, McCulloch, McMahon, Olmsted, Schwab, Smith, Soper, Veeder, Zahorsky.

INTERNATIONAL CLINICS. A quarterly of illustrated clinical lectures and especially prepared original articles by leading members of the medical profession throughout the world. Edited by Henry W. Cattell, M. D. Volume 2, thirty-fifth series. Philadelphia and London. J. B. Lippincott Company. 1925.

The contributors to this number are Doctors Albee, Baumler, Barker, Brown, Bruce, Callender, Cattell, Cumston, Drucek, Erdman, Goodman, Haughwout, Held, Ireland, Keeler, Krumbhaar, Matas, Walsh, Wiley.

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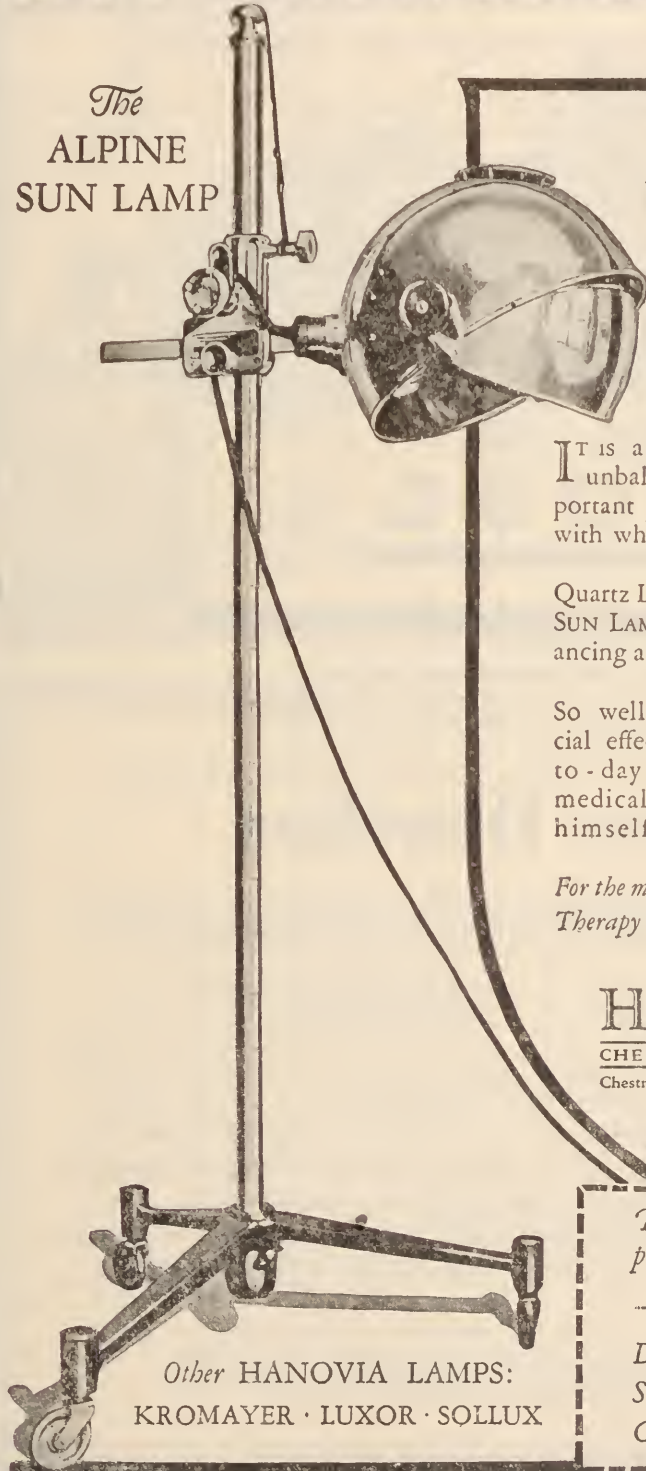


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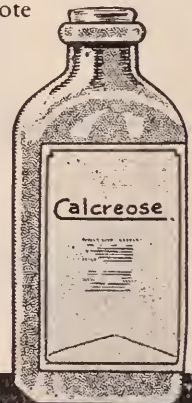
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This mixture contains proteins, carbohydrates and mineral salts in a form readily digestible and available for immediate assimilation.

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ALBUMIN	5.46%	.65%
LACTOSE	38.00%	4.53%
ASH	5.76%	.69%
WATER	1.50%	88.27%
CALORIES (per ounce)	149.	18.

* 4½ Ounces to a quart of water

KLIM is completely soluble in water of any temperature

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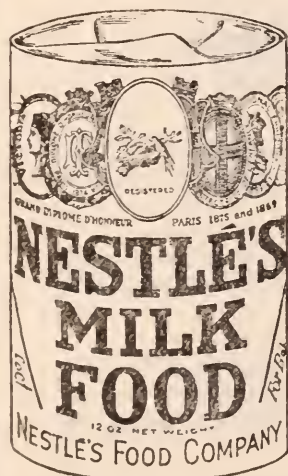
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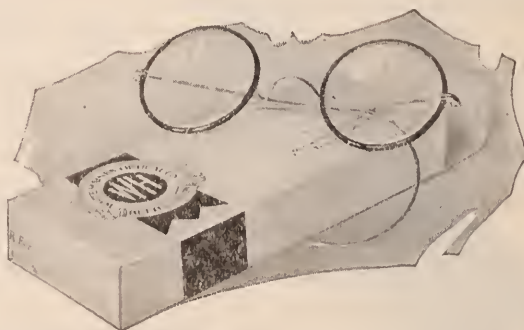
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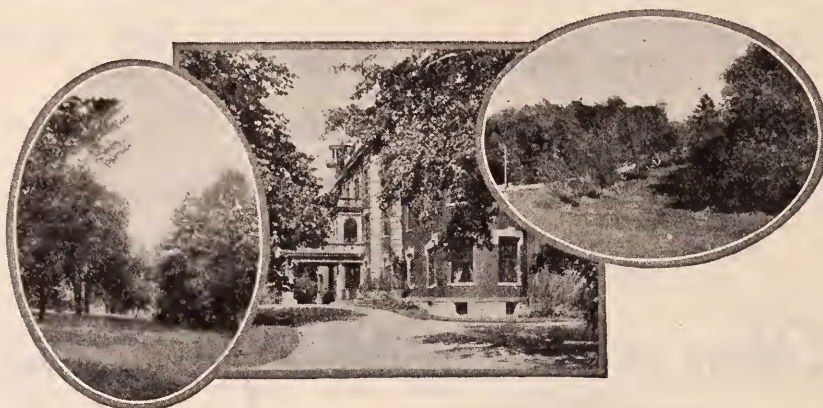
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Book Reviews

AMERICANITIS—BLOOD PRESSURE AND NERVES. By William S. Sadler, M. D. New York. The Macmillan Company. 1925. Price \$2.00.

This constant world wind of haste which characterizes the American people leaves in its path countless victims of blood-pressure. Dr. Sadler's book sounds a timely note of warning.

THE NEWER KNOWLEDGE OF NUTRITION, THE USE OF FOODS FOR THE PRESERVATION OF VITALITY AND HEALTH. By E. V. McCollum and Nine Simmons. Illustrated third edition, entirely rewritten. New York. The Macmillan Company. 1925. Price

This edition has been brought up to date. Since the second edition of this work two new vitamins have been discovered. There has also been much new light thrown upon the specific pathological effects of deprivation of individual vitamins. Marked advances have likewise been made in the study of the effects of deficiency of mineral elements on general health. The relation of the diet to tooth decay, to eye troubles, to instability of the nervous system, osteomalacia, rickets, ovarian function, fertility, longevity, etc., are discussed in the life of all the data of animal experimentation. New chapters have been added on the

relation of the diet to resistance to disease, iodine deficiency and goiter, experimental rickets and calcium assimilation.

HAND-ATLAS OF CLINICAL ANATOMY. By A. C. Eycleshymer and Tom Jones. Illustrated with 395 line drawings, mostly in color. Philadelphia and New York. Lea & Febiger. 1925. Price \$11.00.

This volume is an outgrowth of the work prepared for the medical corps of the army and navy during the late war, under the title of Manual of Surgical Anatomy. The manual is divided into four parts: Part I, the Head and Neck; Part II, the Thorax and Neck, the Thorax, Abdomen and Pelvis; Part III, the Upper Extremity; Part IV, the Lower Extremity.

INTERNAL SECRETION AND THE DUCTLESS GLANDS? By Swale Vincent, M. D. Illustrated. Third edition. New York. Physicians and Surgeons Book Company. 1925. Price \$10.00.

This edition contains an extensive selected bibliography. The edition contains much new matter, especially the chapter on the Pancreas and the reproductive organs. The number of illustrations has been increased. A short chapter on organotherapy has been added. The portions dealing with clinical subjects have been still further expanded.

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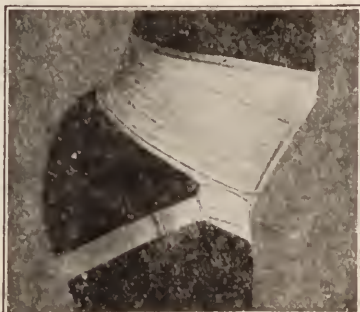
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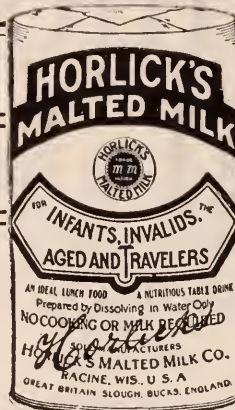
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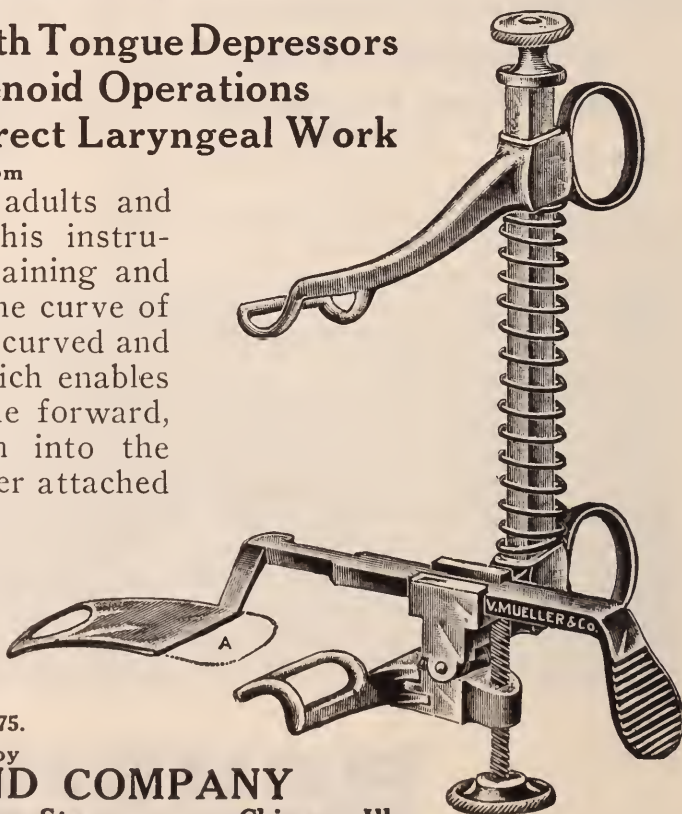
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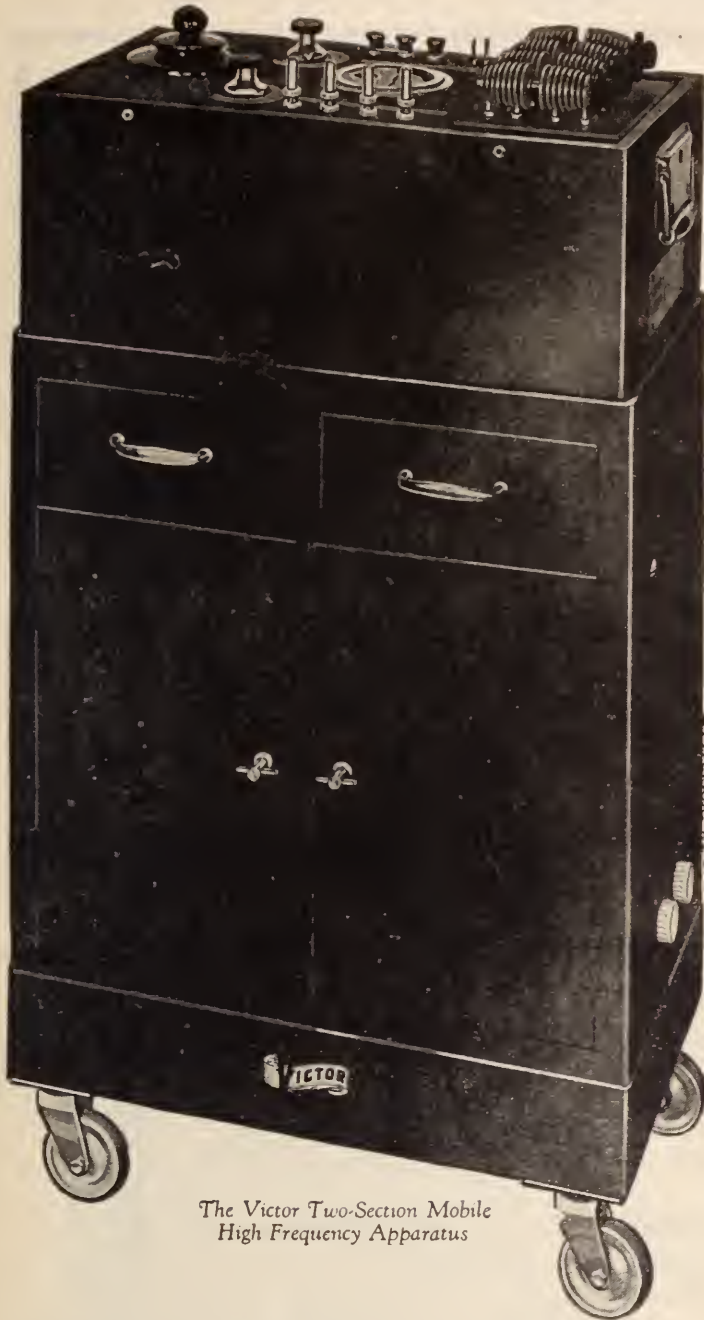
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OVERCROWDING FACILITATES SPREAD OF SOCIAL DISEASES

The National Anti-Slum League of Paris in its recent report states that overcrowding is rampant in certain sections of that city and that it may be viewed as the cause of social disintegration and the moral downfall of the family. "The danger of promiscuity," says the report, "naturally occurs when parents and children sleep in the same room and elder and younger brothers—and very often brothers and sisters—sleep in the same bed."

The housing difficulties in Germany, according to an abstract in "Social Pathology"—issued by the United States Public Health Service, have much to do with the increase of venereal diseases, particularly among children. Due to overcrowding entire families have been infected, and a coincident laxity of moral standards has been found. One report states that a family of nine slept in one room, two married couples being among the number.

An editorial in "National Health," published in London, states that "We are not likely to attain a full measure of success in the control of venereal disease until we have arrived at a solution of the housing difficulty."—United States Public Health Service.

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It does not burn, irritate or injure tissue in any way.

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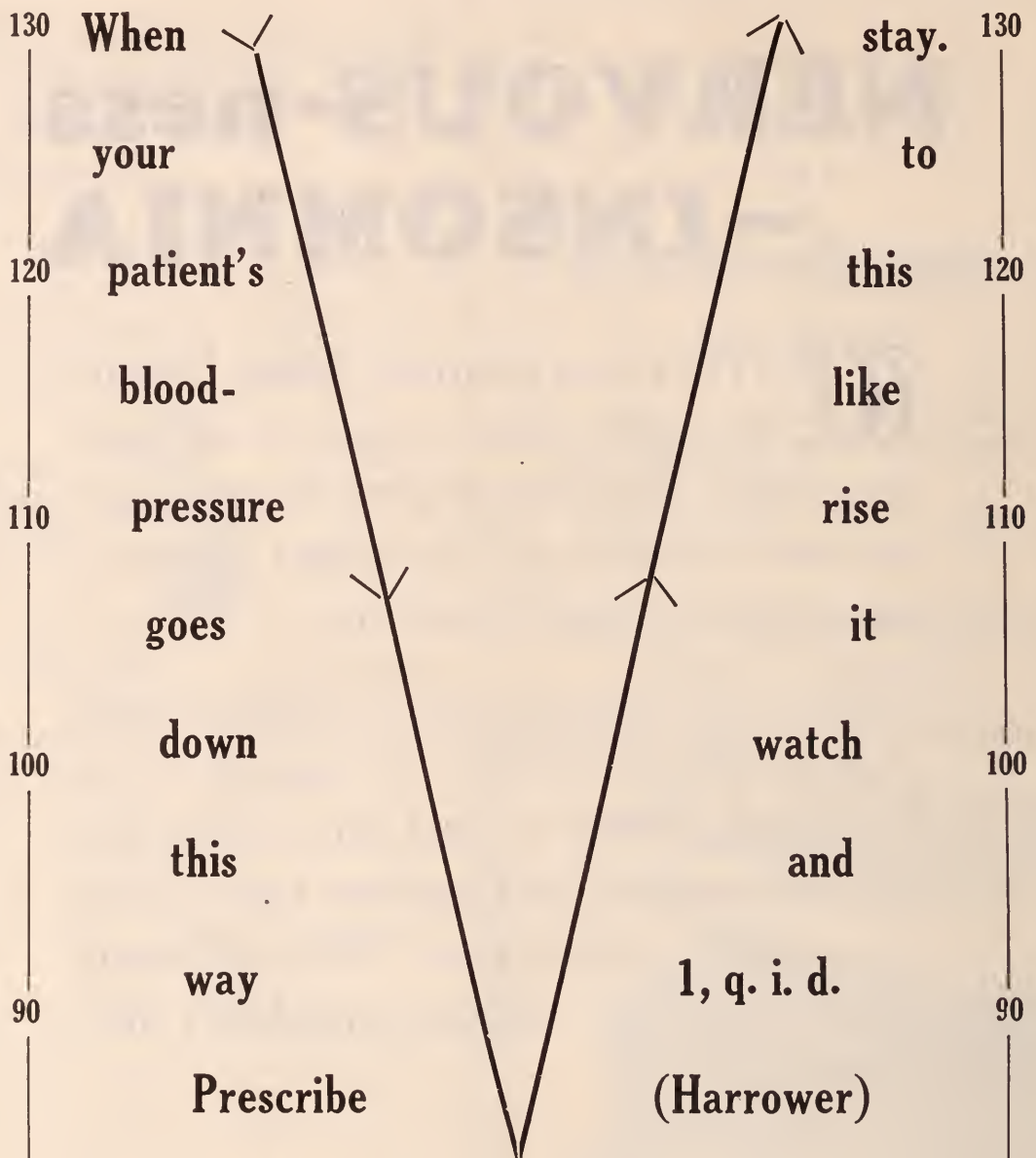
NERVOUS-ness —INSOMNIA

WHATEVER its primary cause, Insomnia is the direct result of nervous excitation. Sleepless nights increase the nervous tension, and increased nervousness leads to more insomnia.

Unless this vicious circle is broken, your patient will always be in distress. 1 or 2 Allonal tablets at bed-time calms the sufferer's nerves and enables him to enjoy a good night's rest. With sufficient sleep, of course, nervous irritability also subsides.

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Apply to nose, eyes and
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By Edgar A. Guest

"The last shall be first," so the Good Book tells, and
I know that it is true,
And this is the tale of a cunning mind which gave
me a laugh or two.

There were twelve of us bound for a little town,
and we sat in the smoker's gloom
And discussed our chances there and then of getting
a hotel room;
But one man, old in the traveling game, said casually to us;

"I've made this town a hundred times, and they'll
meet you with a bus."

The bus was there when the train pulled in, and
we made a rush for it.

We scrambled, luggage and weary men, for a
chance in the rig to sit,
But the wise old traveling man got up in an indolent
sort of way

And took his time to walk the stretch from the
platform to the dray;

He stood at the steps with his hat in hand and
helped old women in.

And he piled their baggage at their feet with a most
delightful grin.

I never dreamed he could be so deep or could play
so sharp a trick,

I never dreamed that a grip or two made a barricade so thick,

But I noticed at last when we started off, this
courtly man and kind

Hadn't left a seat for himself inside, but was hanging
on behind.

I was sorry for him in my childlike way, but I
grieve for him no more,

For he gave one leap for the clerk inside when we
reached the hotel door.

We were blocked in the bus by cases large, by
bundles and baskets, too;

A fat old lady barred the way, as fat old ladies do.
But at last we got to the clerk inside, and he said
with a look of gloom:

"I'm sorry, gents, but the first chap in has taken
our only room!"

Then it dawned on us how we'd all been tricked,
and that kindly man we cursed,

For we'd learned that the last man on the bus to the
hotel clerk comes first.

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"I never saw a man so afraid of catching cold as
George is."

"Yes, I know. I hear that when he takes a bath he
is so afraid of catching cold that he stops up the holes
in the sponge."

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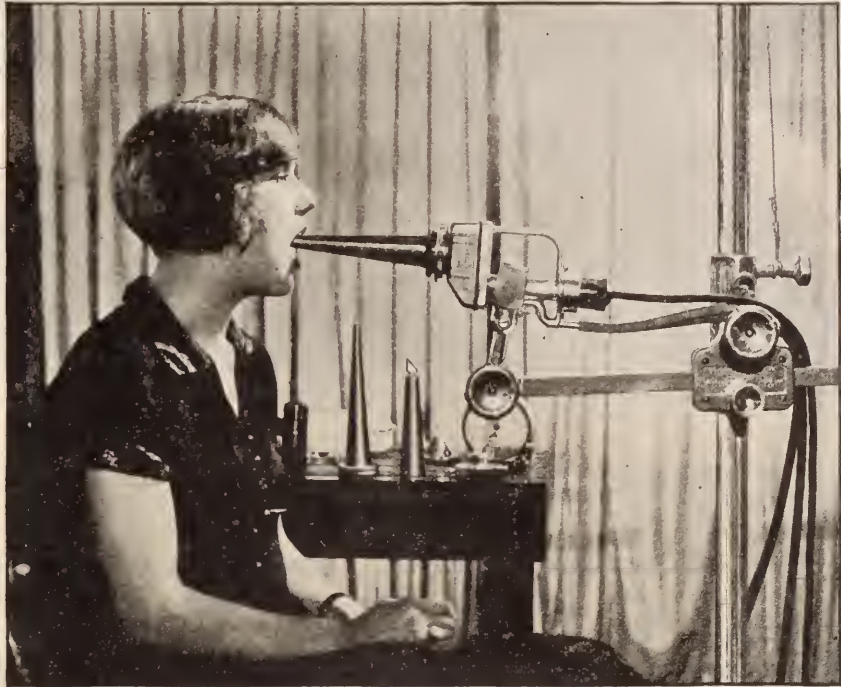
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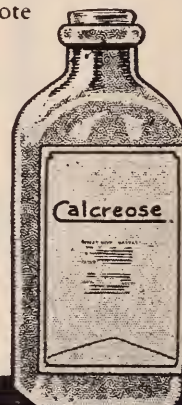
The value of creosote, **especially as an adjunct in the treatment of tuberculosis and bronchitis** has long been recognized, its use having been limited only because of difficulties of administering the drug in sufficient dosage without causing gastric distress. These objections have been largely overcome through the use of Calcreose.

Calcreose (calcium creosotate) is a loose chemical combination of creosote (50%) and calcium hydrate from which the creosote is slowly released in the body.

Calcreose may be administered in large doses over long periods of time, apparently without causing gastric distress.

The Maltbie Chemical Co., Newark, N. J.
Calcreose

SAMPLES AND
LITERATURE
SUPPLIED UPON
REQUEST.



The Management of an Infant's Diet

Summer Diarrhea

The following formula is submitted as a means of preparing suitable nourishment in intestinal disturbances of infants usually referred to as summer diarrhea:

Mellin's Food
Water (boiled, then cooled)

4 level tablespoonfuls
16 fluidounces

This mixture contains proteins, carbohydrates and mineral salts in a form readily digestible and available for immediate assimilation.

The need for protein is well understood as is also the value of mineral salts, which play such an important part in all metabolic processes. Carbohydrates are a real necessity, for life cannot be long sustained on a carbohydrate-free diet. It should also be stated that the predominating carbohydrate in the above food mixture is maltose—which is particularly suitable in conditions where rapid assimilation is an outstanding factor.

Above all is the satisfactory result from the use of this suggested nourishment, which is well supported by clinical evidence.

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KLIM is whole milk—pure and uniform—from which the water has been removed. In it the nutritive properties of fresh cow's milk are retained in highly assimilative form.

It is the basis for safe and simplified infant feeding and so closely conserves the flavor and the natural properties of milk that it is the ideal milk for the growing child.

Analysis of

KLIM

POWDERED WHOLE MILK

	Dry	Liquid *
BUTTERFAT	28.00%	3.33%
CASEIN	21.28%	2.53%
ALBUMIN	5.46%	.65%
LACTOSE	38.00%	4.53%
ASH	5.76%	.69%
WATER	1.50%	88.27%
CALORIES (per ounce)	149.	18.

* 4½ Ounces to a quart of water

KLIM is completely soluble in water of any temperature

When Used in Infant Feeding

Reliquified KLIM at normal strength has the same analysis and caloric value as natural whole cow's milk and is subject to the same modifications when used in infant feeding

Recognizing the importance of scientific control, all contact with the laity is predicated on the policy that KLIM be used in infant feeding only according to a physician's formula.



MERRELL-SOULE CO., SYRACUSE, N. Y.
Also Makers of Merrell-Soule Powdered Protein Milk

In Canada KLIM and Merrell-Soule Powdered Protein Milk are made by Canadian Milk Products, Ltd., 347 Adelaide Street, West, Toronto



PROTEIN EXTRACTS IN PASTE FORM

FOR the maximum of convenience in the diagnosis of hypersensitization to proteins, use the Parke, Davis & Company line of Protein Extracts, Diagnostic.

These Extracts are put up in the form of paste with a glycerin-boric acid base. They are supplied in soft-tin, collapsible tubes with a narrow outlet, so that a quantity no larger than a pin-head can be removed for the test without touching the remainder.

The technique is extremely simple. All that it is necessary to do is to scarify the site of the test and apply a small quantity of the paste with the end of a sterile toothpick. No other form of protein extract can be so easily applied without jeopardizing the accuracy of the test.

As a further convenience these Protein Extracts are also put up in groups, so that the physician can test the patient's susceptibility toward five or six of the proteins at once, thus materially economizing his own and his patient's time.

THE line consists of 149 individual Protein Extracts, of which 100 are from foods, 6 from seasonings of various kinds, 13 from pollens, 17 from bacteria, 10 from hair, wool, or feathers, others from horse serum, bovine serum, and tobacco; and a number of grouped pollens not represented in the list of individual proteins. Control material is also supplied, consisting of the glycerin-boric acid base only—no protein.

We shall be glad to send you our 40-page booklet on Protein Sensitization. Write for it.

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of the System, following infection or shock, is one of the fundamental axioms of therapeutics.

Compound Syrup of Hypophosphites "FELLOWS"

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in the form of summer colds, sore throat, inflamed eyes, dust or pollen irritations, sunburn, chafing, urticaria, insect bites, cuts, bruises, and all the other incidental ills attending vacation periods call for the use of

ALKALOL

which has been called a specific for mucous membrane or skin irritation or inflammation.

Prescribe ALKALOL as an eye lotion, nasal spray, gargle, mouth wash, injection, wet dressing or internally as an antacid and antifermentative. It dissolves mucin and pus, inhibits bacterial action, freshens mucous surfaces. ALKALOL is deodorant and opposes hypersecretion, tissue relaxation and catarrh. ALKALOL makes an agreeable and effective vaginal douche.

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In prescribing Pluto Water, you can be sure the patient will procure an eliminant of known potency, absolutely unvarying in its constituents. Too, Pluto Water is bottled under the most sanitary conditions and sealed air-tight in sterilized glassware. Pluto is easily procured by any patient—on sale at all drug stores.

Sample and literature to the medical profession on request

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their recommendation or prescription.

- which is for infants 1 to 7 months of age;
- which is simply a full-cream cow's milk scientifically homogenized and desiccated;
- which is prepared by the Nestlé's Food Co., especially for the use of physicians, and sold only on



We believe that Lactogen, the natural food for Infants, exactly meets your own ideas on infant feeding.

We feel sure your clinical experience with Lactogen will verify our belief.

Let us send you a sample tin. Please use the coupon now.

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Are you still depending on the older treatments, or are you taking advantage of the recent important discoveries regarding blood stimulation?

Leake, in the Pharmacological Laboratory of the University of Wisconsin, has shown that a combination of spleen and red bone marrow

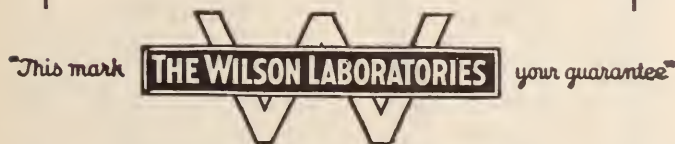
1. Increases the number of circulating red blood cells;
2. Increases the amount of hemoglobin in the circulation;
3. Increases the resistance of the red cells to certain haemolyzing tendencies;
4. Makes the blood coagulate more quickly;
5. Increases the rate of formation of new red blood cells.

You can apply this valuable discovery in your practice by using SPLEENMARROW in Secondary Anemia. Its use in Pernicious Anemia is contraindicated.

Clinical tests have demonstrated the superiority of SPLEENMARROW over iron and arsenic combinations in cases of Secondary Anemia.

SPLEENMARROW is furnished in capsules, tablets, or solution.

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The more familiar the practitioner becomes with Agarol, the more he will appreciate its superiority to ordinary laxatives. A trial in some intractable case will tell him why.

AGAROL is the *original* Mineral Oil—Agar-Agar Emulsion, and has these special advantages: Perfectly homogenized and stable; pleasant taste without artificial flavoring; freedom from sugar, alkalies and alcohol; no contraindications; no oil leakage; no griping or pain; no nausea or gastric disturbances—Not habit forming.

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**MATERNITY
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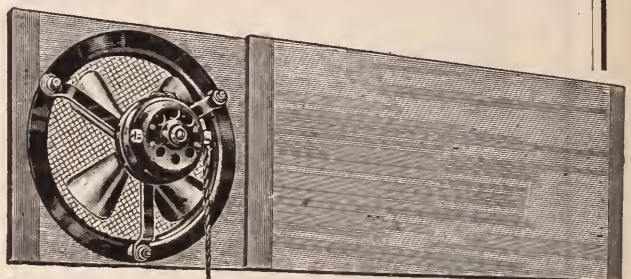
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Adjustable

For your office or laboratory,
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When turned on, the ventilator
creates a brisk current of air outward so that effective
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The fan opening is screened so that there is no danger
of admitting flies or other insects when the fan is not
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9MJ4100. Adjustable Window Ventilator, 110-volt A. C.
or D. C., for any window 18 1/4 to 36 inches..... **\$6.00**

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Physicians in good standing are cordially invited to visit the Battle Creek Sanitarium and Hospital at any time for observation and study, or for rest and treatment.

Special clinics for visiting physicians are conducted in connection with the Hospital, Dispensary and various laboratories.

Physicians in good standing are always welcome as guests, and accommodations for those who desire to make a prolonged stay are furnished at a moderate rate. No charge is made to physicians for regular medical examination or treatment. Special rates for treatment and medical attention are also granted dependent members of the physician's family.

An illustrated booklet telling of the Origin, Purposes and Methods of the institution, a copy of the current "MEDICAL BULLETIN", and announcements of clinics, will be sent free upon request.

THE BATTLE CREEK SANITARIUM, Room 281, Battle Creek, Mich.

The Edward Sanatorium

Established in 1907 by Dr. Theodore B. Sachs

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An institution conducted by the Chicago Tuberculosis Institute for the treatment, by modern methods, of selected cases of Pulmonary Tuberculosis.

Attractive location and surroundings.

Buildings and equipment modern and adequate for all emergencies.

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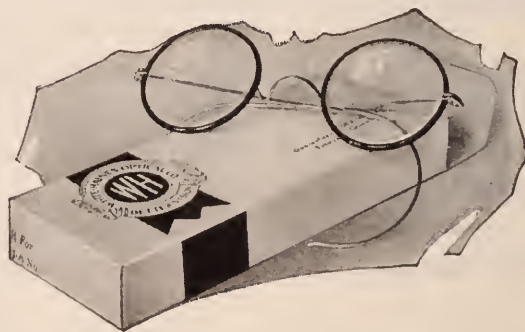
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As it comes to you, in a package that stamps it above the ordinary.

White-Haines prescriptions embody all the precision that you expect; as the blue ribbon indicates, products of pains-taking care and attention to detail. Lenses are Bausch & Lomb, frames exactly what you specify; assembled in the White-Haines way—all that you could ask.



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To My Brother Physicians:

I practiced medicine in Chicago, Illinois, for 36 years. Am a member of the American Medical Association, the Chicago and Illinois Medical Societies. I know how hard the life is. How easy we parted with our money and how often we lost. But here and now is the place to recoup. Sarasota is alive with opportunities. You can make money here with me in Real Estate. You can also lengthen your life and enjoy it to its fullest extent in Sarasota and escape the rigors of the Northern Winters. You owe this to yourself and family. Don't continue to deny yourself the pleasure and profit any longer.

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*The fastest growing city per capita in the United States on
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I am putting on a subdivision near to the center of the city, being only 6 minutes ride from downtown and in the trend of business development. It is named

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This is one of the outstanding investments here and merits your consideration.

Wouldn't it be fine if we could have a professional community, Doctors and Dentists living in harmony here in this particular subdivision.

If you want to make some REAL MONEY invest in SARASOTA, FLORIDA, REAL ESTATE with me.

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The Central Trust Co., Chicago, Illinois.

BIRDS OF A DIFFERENT FEATHER

From the topmost twig of towering tree

A hermit thrush poured melody;

While, perched on a dead limb far below,

Discordantly cawed a cynical crow.

A traveller, charmed by the vesper song

Of the woodland chorister, tarried long

But anathemas hurled at the carrion bird

Who voiced but evil and would be heard.

Now both birds sat on the self-same tree—

Drew the blessings of Nature in like degree—

But the one gave thanks with each singing breath

While the other grumbled and croaked till death.

So ever the wood-thrush' liquid lay

Brings peace to the heart at the close of day.

While the clamor of crow leaves the spirit numb,

And fearful of "things in the night" to come.

L'Envoi: If you can't carol, don't croak.

—G. H. C.

(Reprinted from The American Journal of Clinical
Medicine, February, 1924)

RIGHT OFF THE GRIDDLE

An electric stove company has a most peculiar damage suit filed against it. The plaintiff's petition contains these words:

"Plaintiff alleges that this defendant represented to her that this stove would not become heated on the upper surface of the oven. That plaintiff, relying wholly upon this defendant's representations, placed

her bath tub in the kitchen near the stove. That, upon emerging from the tub, plaintiff's foot accidentally came in contact with the soap upon the floor and she was thus compelled to sit upon the stove.

"That, although she arose therefrom with all due diligence, she discovered she had been branded 'B-47'."

—Prize winning joke in *Forbes Magazine*.

MORE WAYS AND MEANS TO KILL YOUR MEDICAL SOCIETY

"Don't go to your Medical Society meetings if—

1. You know everything already.
2. If you are impervious to new ideas when presented by others.
3. If you have reached the acme of excellence and efficiency.
4. If your ability cannot be improved.
5. If you can't see any benefit in discussing the other fellow's suggestions.
6. If you are too miserly to contribute some of your time to organized, cooperative effort.
7. If you have no use for your fellowman. On the other hand if you want to be a part and an active supporter of your society—then go to every meeting.

—Exchange.

"Pack my box with five dozen liquor jugs" is the shortest sentence containing all the letters of the English alphabet. This refers to empty jugs, of course.

The Walker Hospital Clinic

EVANSVILLE, IND.

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INTRAVENOUS SOLUTIONS

THE CHEMICAL UNION

JAMES J. MONTAGUE

("Oxygen men should marry nitrogen women."—Dr. R. Kendrick Smith of Boston.)

Oh, lovely nitrogenous lady,

Each oxygen atom in me

With love is aflame, and demands that you name

The day when our wedding shall be.

Yea! even the tiny electrons

Of which the said atoms are built

Would droop in despair if a maiden so fair

Were to prove a perfidious jilt.

So hark to my passionate pleading,

Let our hearts and our souls have communion—

With never a sigh as the years hasten by—

In a perfectly chemical union.

I wedded, before I had wisdom,

A maid of the oxygen sort,

Our marital life was a record of strife

Which ended, of course, in a court.

Identical atoms composed us.

Our wants were exactly the same.

It's a fatuous plan for an oxygen man

To marry an oxygen dame.

We both wanted fat for dinner,

Unlike Mr. Spratt and his spouse,

And for seven long years, filled with curses and tears,

Our rows made a wreck of the house.

But you're a nitrogenous maiden;

Your atoms are friendly with mine;

For the fat I'll be keen; you'll be strong for the lean,

And our dinners will all be divine.

We'll dwell in delightful contentment,

According to chemical law,

And our joys will increase in molecular peace

With never the sign of a flaw.

So prithee, accept my proposal,

Send me word that you'll surely be mine.

We'll be happy through life as a husband and wife,

For our atoms will get along fine.

THE WEIGHT OF BACTERIA

Knowing the measurements of bacteria, it follows that the volume may be computed; knowing the volume and the weight of the substance of themicrobe as compared with an equal volume of water, the weight of the organism can be arrived at. A cylinder the size of the typhoid bacillus and 1.2 times as heavy as water would weigh almost exactly 0,000,000,002 milligram. Five hundred millions of them, in other words, would weigh a milligram. A milligram is one thousandth of a gram, and a gram in turn is approximately one thirtieth of an ordinary ounce. Fifteen millions of millions of typhoid bacilli, therefore, would be required to balance an ounce weight. Viewed from this standpoint, it is not difficult to believe that bacteria are in reality about the smallest of known living things. —Kendall, A. I.: Civilization and the Microbe.

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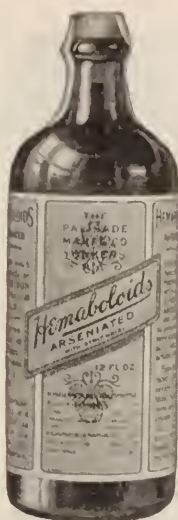
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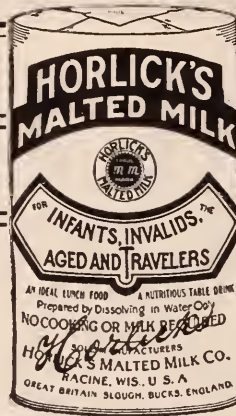
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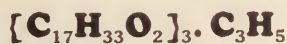
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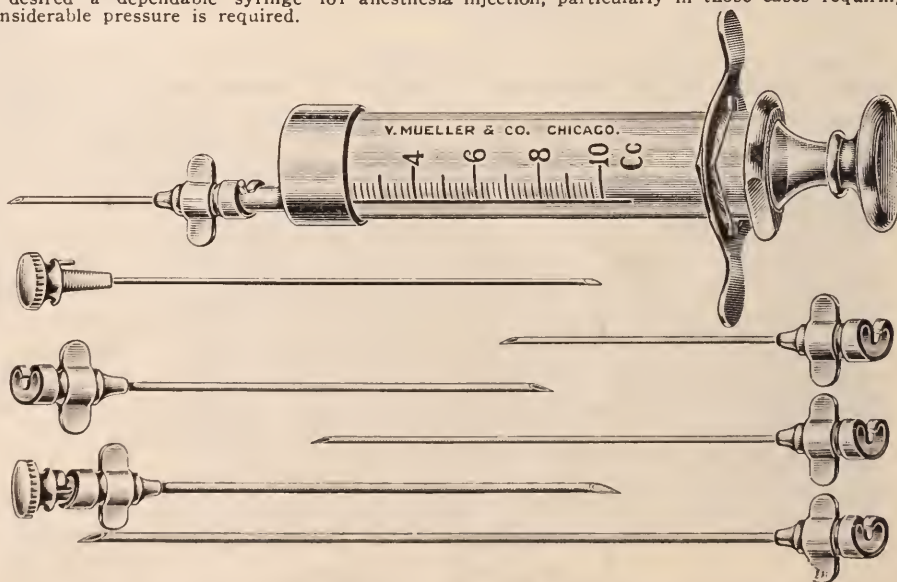
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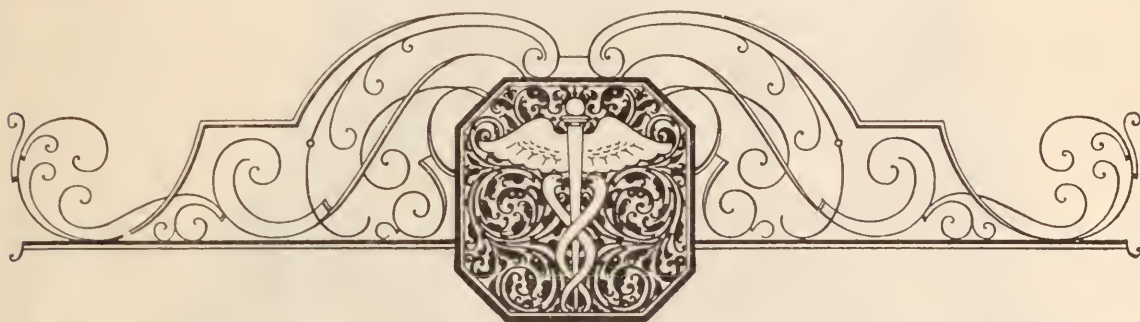
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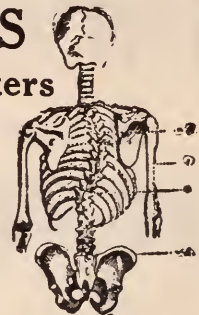
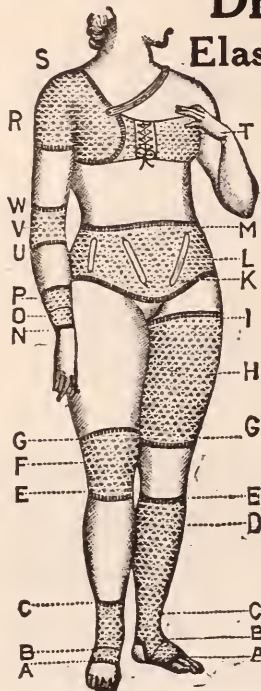
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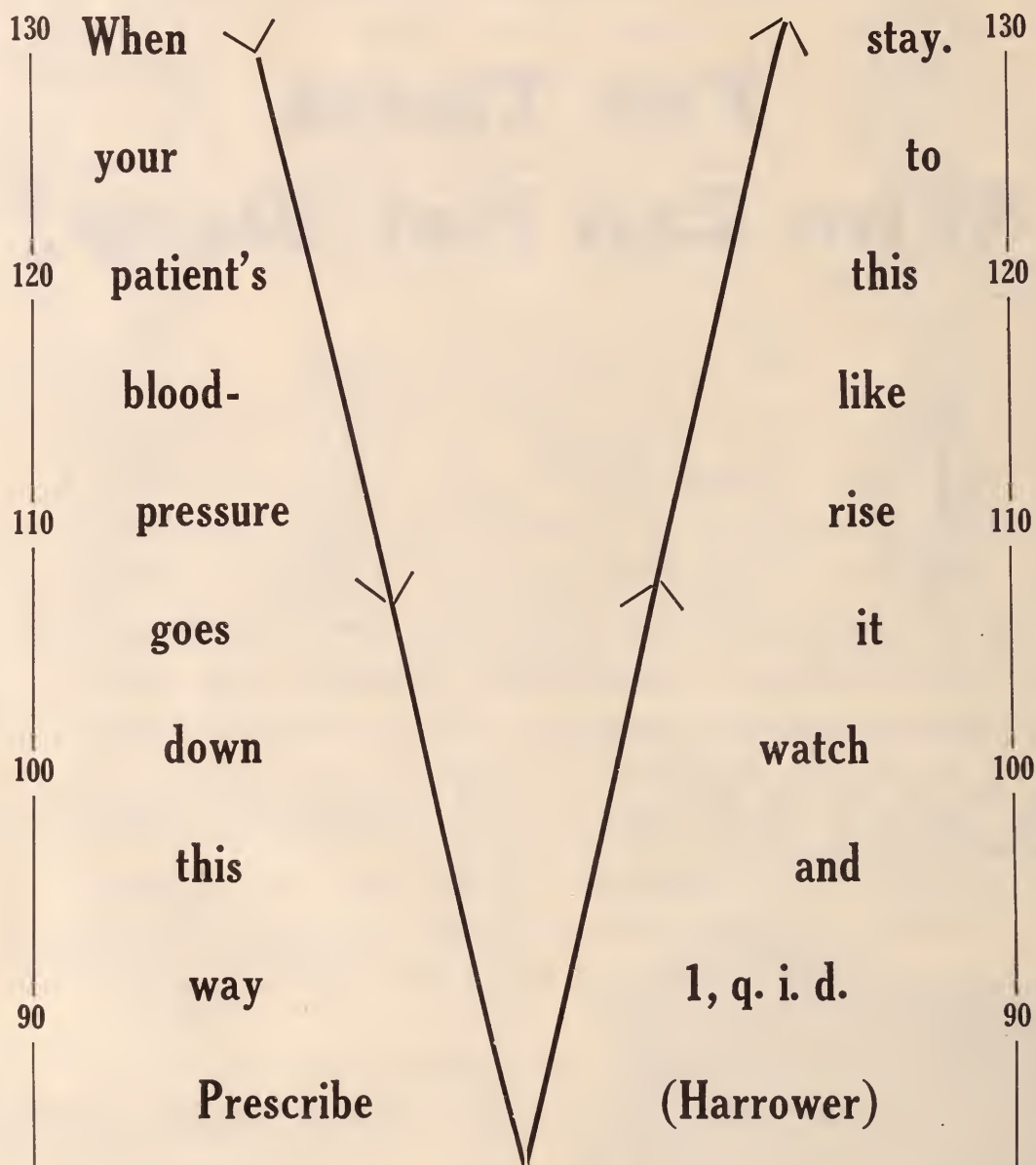
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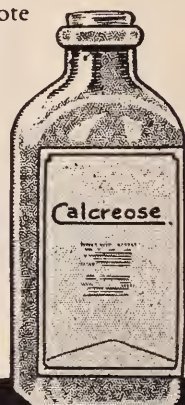
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Book Reviews

PEDIATRIC NURSING. By Abraham Levinson, M. D. Illustrated with 27 engravings and 1 colored plate. Philadelphia and New York. Lea & Febiger. 1925. Price \$2.50.

This volume is intended as a text book for nurses. It is divided into three sections. The first portion includes anatomy, physiology and general care of infants at home and hospitals and the presentation of general methods of examination and treatment of children. The second portion deals with the diseases of infancy and childhood. The third portion is comprised of seven chapters on the psychological and sociological phases of child nursing.

THE CEREBRO-SPINAL FLUID IN CLINICAL DIAGNOSIS. By J. Godwin Greenfield, M. D. and E. Arnold Carmichael, M. B., Ch. B. St. Martin's Street, London. MacMillan & Company, Ltd. 1925. Price \$5.00.

In recent years there has been an enormous increase in our knowledge in the compression of the cerebro-spinal fluid under normal and pathological conditions. In this volume the author has brought up to date all that is definitely known about the nature of the cerebro-spinal fluid and of its variations in disease.

PHYSICAL CHEMISTRY IN BIOLOGY AND MEDICINE. By J. F. McClendon, Ph. D., Professor of Physiologic Chemistry, University of Minnesota Medical School, and Grace Medes, Ph.D., Assistant Professor of Physiologic Chemistry, University of Minnesota Medical School. Octavo of 425 pages, illustrated. Philadelphia and London. W. B. Saunders Company. 1925. Cloth, \$4.50 net.

This work is intended for research workers in biology and medicine. It is not intended as a text book on all the subjects considered. In compiling the work the author has included some of the results of his own researches together with those of others on related subjects.

A COMPEND OF OBSTETRICS. By Clifford B. Lull, M. D. Tenth edition. 84 illustrations. Philadelphia. P. Blakiston's Son & Company. Price \$2.00.

In this work the editor has brought up to date the work originally written by Dr. H. G. Landis. It is intended to fill a persistent call for a small practical volume containing the best knowledge of present day obstetrics without being weighted down with theoretical academic or the general discussions which are rife today regarding various practices in this branch of medicine.

A COMPEND OF DISEASES OF THE SKIN. By J. Frank Schamberg, M. D. Seventh edition, revised and enlarged with 119 illustrations. Philadelphia. P. Blakiston's Son & Company. Price \$2.00 net.

In this edition the text has been thoroughly revised and brought up to date. Rare and unimportant conditions are not discussed in this compend.

(Continued on Page 33)

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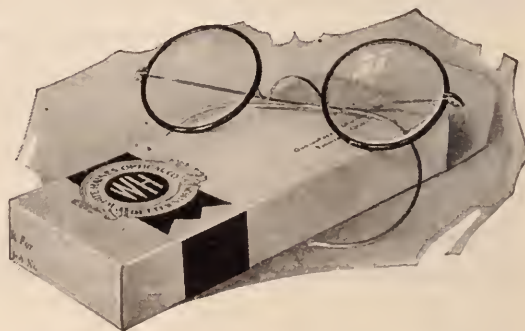
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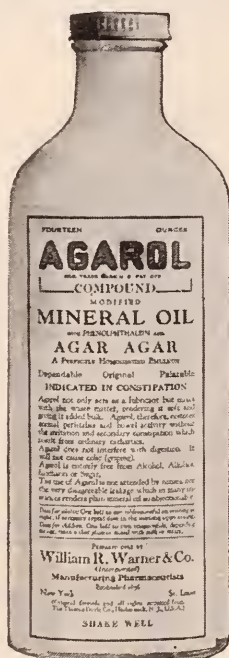
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Book Reviews

(Continued from Page 25)

A TEXT-BOOK OF GENERAL BACTERIOLOGY. By Edwin O. Jordan, Ph.D. Professor of Bacteriology in the University of Chicago and in Rush Medical College. Eighth Edition, thoroughly revised. Octavo of 752 pages, fully illustrated. Philadelphia and London. W. B. Saunders Company. 1924. Cloth \$5.00 net.

This work is the outgrowth of lectures recently given by the author at the University of Chicago. The author does not claim that this work covers all sides of bacteriology and that an exhaustive work on this subject would cover many volumes, however the fundamental principles and laboratory work are treated as fully that seems desirable in a book of this class.

SYMPTOMS OF VISCERAL DISEASE. By Francis Merian Pottinger, M. D. Third edition with eighty-six text illustrations and ten color plates. St. Louis. C. V. Mosby Company. 1925. Price \$6.50.

In this edition several changes have been made in order to make it conform to newer knowledge. Changes have been made throughout the text to conform to present day knowledge of body cells and the vegetative nervous system.

CANCER, ITS SUCCESSFUL MEDICAL TREATMENT. By John Murray, M. D., Joliet, Illinois. 1925.

In presenting this work the author calls attention to the desirability of making a trial of chloride of nickel in the treatment of cancer. He feels that in doing so the doctor will make no mistake and that the doctor must take into account the stage of the disease and also the age and viability of the patient. In discussing the uses and values of other remedies including surgery and radium he concludes: The chloride of nickel is very mild in action, it produces no fever or other disturbance and its action seems to resemble a physiological action. It is both safe and certain.

SOME FUNDAMENTAL CONSIDERATIONS IN THE TREATMENT OF EMPYEMA THORACIS. By Evarts A. Graham, M. D. Illustrated. St. Louis. C. V. Mosby Company. 1925.

This essay was awarded the Samuel D. Gross prize of the Philadelphia Academy of Surgery in 1920. Its publication has been delayed because of a complication of disorders in the publishing business at the time the prize was awarded. The author well says if the treatment of empyema is conducted in accordance with the principles here discussed the mortality will be considerably less than that which existed before the recognition of the importance of these principles.

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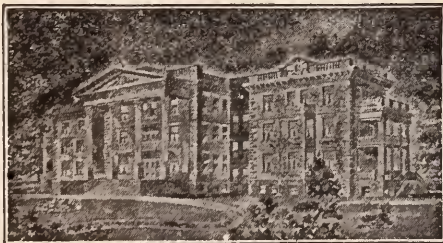
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(Continued from Page 33)

PERSONAL AND COMMUNITY HEALTH. By Clair Elsmere Turner. Illustrated. St. Louis. C. V. Mosby Company. 1925. Price \$2.50.

This work deals with the health of the individual and the health of the community, it deals with personal hygiene and healthful living and the scientific principles upon which health practices rest.

THE NORMAL DIET. By W. D. Sansum, M. D. Illustrated. St. Louis. C. V. Mosby Company. 1925. Price \$1.50.

Diet errors are very common, and such errors are no doubt responsible for many minor ailments as well as some of the more serious ones. This work is a simple statement of the principles underlying the selection of a normal diet.

METHODS IN SURGERY. By Glover H. Copher, M. D. St. Louis. The C. V. Mosby Company. 1925. Price \$3.00.

In this volume the author presents the various routine and special procedure employed on the surgical service of the Barnes and the St. Louis Children's Hospitals, some of which represent the application of newer physiological ideas to the surgical clinic.



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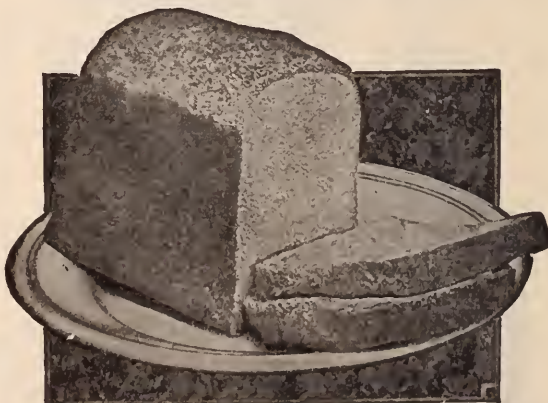
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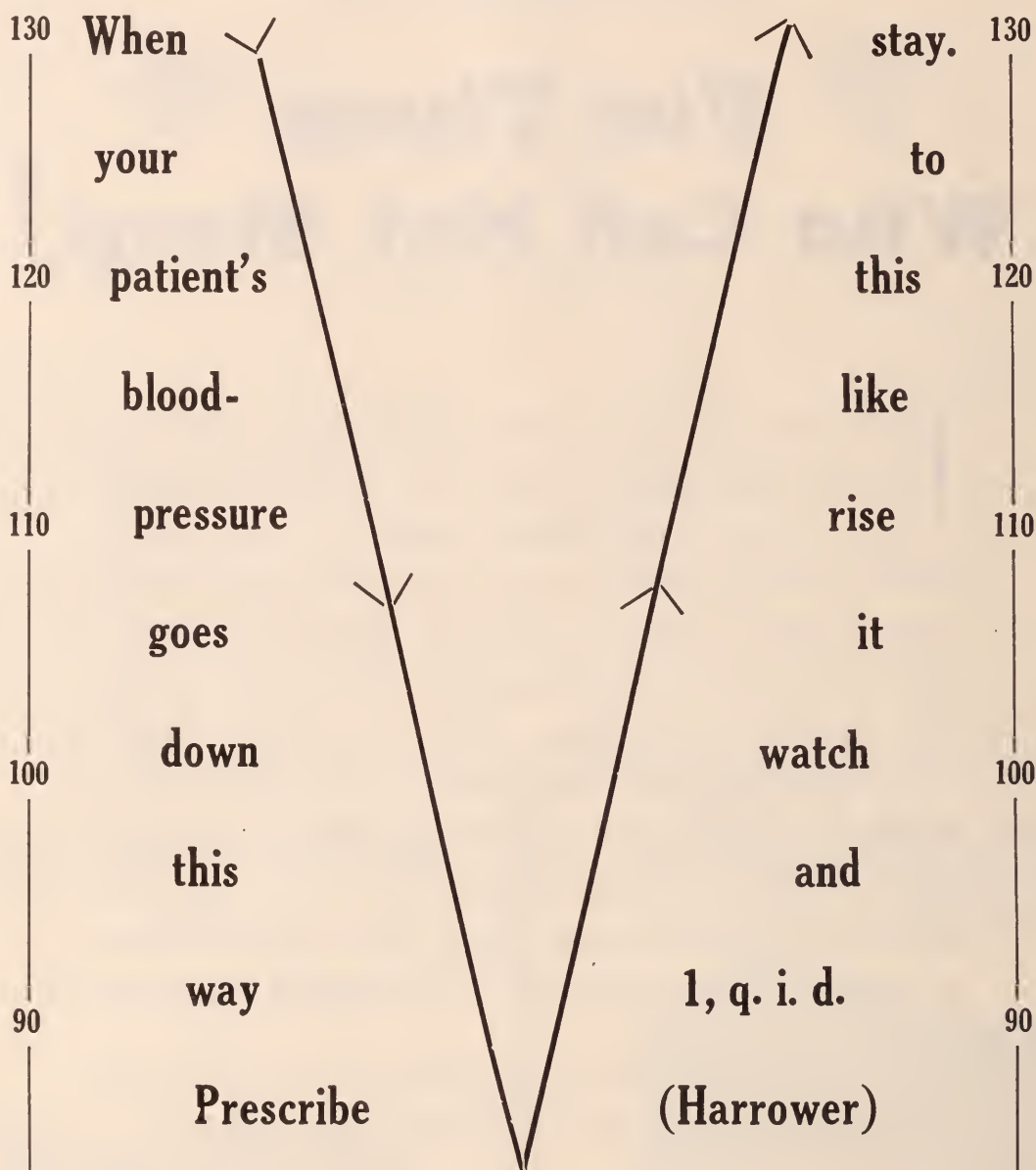
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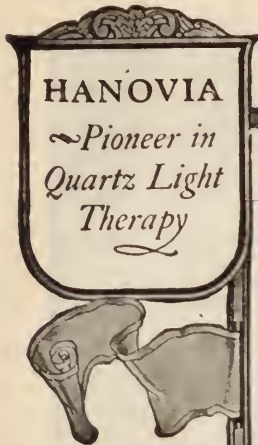
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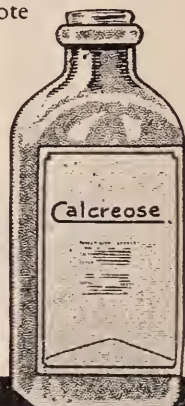
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Malnutrition, Marasmus, Infantile Atrophy, Athrepsia

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Skimmed Milk (1% fat)	9 fluidounces
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This mixture contains 56.61 grams of carbohydrates, thus supplying material that is utilized rapidly for heat and energy. The predominating carbohydrate is **MALTOSE**, which has the highest point of assimilation of any of the sugars, is immediately available as fuel and may be safely given in comparatively large amounts. The daily intake of protein from the employment of this formula is 15.54 grams, an amount calculated to be sufficient to replace depleted tissues and to provide for new growth. There is present in the mixture 4.32 grams of salts for replenishing inorganic elements.

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Book Reviews

AN X-RAY OF THE MEDICAL PROFESSION AND ITS DEGENERATES. This is the title of a pamphlet written by Dr. John Hund, 101 Elliott Street, Peoria, Illinois, and offered to the medical profession for dissemination among the general public for the purpose of lay education.

The booklet of 32 pages contains, as one engaged in this movement has said, "a wealth of information," and hence should be widely disseminated among the general public.

In the first part the author gives a concise history of medicine beginning with Hippocrates and traces it to our present age, referring to the many false prophets, dissenters and pretenders with whom the regular profession has had to struggle in the course of time.

In the second part the outstanding fads and fakes of our age are graphically exposed, so that anyone with common sense may see the difference between the regular practice of medicine and the so-called cults, degenerates and parasites feeding upon the unaware and beguiled suffering humanity.

The booklet retails for twenty-five cents but is offered to the profession for ten cents in hundred lots, so that the physician may distribute it among his patients with a minimum of cost.

Dr. Hund's literary effort was highly appreciated by his prominent colleagues in Peoria and some eminent

men of other cities, but it has not gained the circulation it deserves.

May this notice arouse the attention of all who have the welfare of the people at heart so that this meritorious booklet may find its way to every home in the land, for their own benefit and the vindication of the medical profession which is constantly and some time even ruthlessly assailed by her vicious enemies.

THE WRITING OF MEDICAL PAPERS. By Maude H. Mellish, editor of the Mayo Clinic Publications. Second edition, revised, 12 mo of 168 pages. Philadelphia and London. W. B. Saunders Company 1925. Cloth, \$1.50 net.

MODERN MEDICINE. ITS THEORY AND PRACTICE. Originally edited by Sir William Osler Bart, M. D. Third edition, thoroughly revised. Re-edited by Thomas McCrae, M. D., assisted by Elmer H. Funk, M. D. Volume I. Bacterial Diseases, Infections, etc. Illustrated. Philadelphia and New York. Lea & Febiger, 1925. Price \$9.00.

In the twelve years that have elapsed since the first volume of the second edition appeared many changes have occurred in our knowledge of disease. New diseases have come into prominence, such as Botulism and Epidemic Encephalitis. In this third edition the authors have brought the subject of bacterial diseases,

(Continued on Page 28)

What Are You Doing For Anemia?

Are you still depending on the older treatments, or are you taking advantage of the recent important discoveries regarding blood stimulation?

Leake, in the Pharmacological Laboratory of the University of Wisconsin, has shown that a combination of spleen and red bone marrow

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2. Increases the amount of hemoglobin in the circulation;
3. Increases the resistance of the red cells to certain haemolyzing tendencies;
4. Makes the blood coagulate more quickly;
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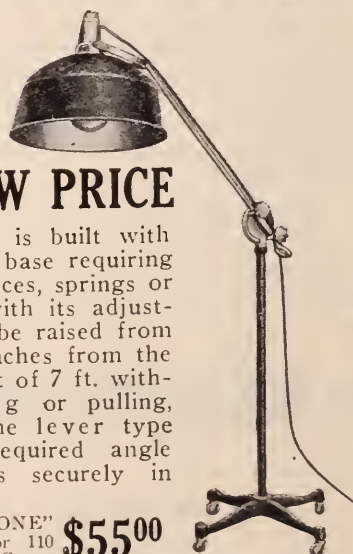
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Book Reviews

(Continued from Page 24)

non-bacterial fungus infections and the mycoses up to date.

DEVELOPMENT OF OUR KNOWLEDGE OF TUBERCULOSIS.

By Lawrence F. Flick, M. D., Philadelphia, 738 Pine St., 1925. Price \$7.50.

The motif underlying the writing of this work is beautifully told by the author in Preface. Tuberculosis has been an affliction from the dawn of civilization and has challenged man's best thought for the alleviation of suffering. No disease has taken so heavy a toll in service and martyrdom for its elucidation. Now that it is understood, and its mysteries cleared up, and the way paved for its extermination, the story of how it was done is of gripping interest. The whole story is beautifully told by the author.

PHYSIOTHERAPY THEORY AND CLINICAL APPLICATION.

By Harry Eaton Stewart, M. D. New York. Paul B. Hoeber, Inc. 1925. Price \$7.50.

This work confines itself exclusively to the consideration of the subject of its title—the theory and clinical application of physio-therapy or physical therapeutics it is emphasized that the author does not consider

physiotherapy as an end in itself but he feels rather that it is an invaluable adjunct to other methods of treatment, and is one which has not yet received its deserved recognition.

THE ART OF MEDICAL TREATMENT. By Francis W. Palfrey, M. D., Visiting Physician, Boston City Hospital; Instructor in Medicine, Harvard University. Octavo of 463 pages. Philadelphia and London: W. B. Saunders Company, 1925. Cloth, \$4.50 net.

This book is intended only for students and practitioners of medicine. It is intended to fill a long felt want that is to place in concise form a volume giving such details as are necessary in dealing with the art of medical treatment.

DISEASES OF THE NOSE, THROAT AND EAR. Medical and Surgical. By William Lincoln Ballenger, M. D. Revised by Howard Charles Ballenger, M. D. Fifth edition. Illustrated with 551 engravings and 32 plates. Philadelphia and New York. Lea & Febiger, 1925. Price \$10.00.

Much advancement on the subject of nose, throat and ear have been made since the previous volume was issued. All the newer knowledge and the operative measures that has been brought forward since the last edition has been incorporated in the fifth edition.

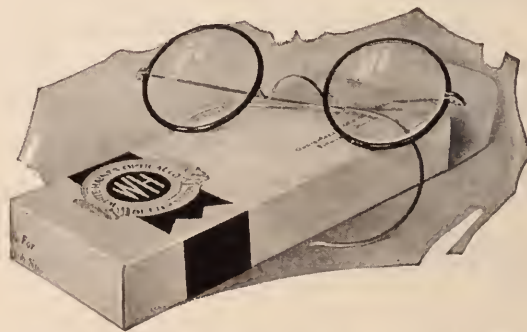
(Continued on Page 30)

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Book Reviews

(Continued from Page 28)

THE MEDICAL CLINICS OF NORTH AMERICA (Issued serially, one number every other month). Volume IX, Number II, New York Number, September, 1925. Octavo of 271 pages, with 24 illustrations. Per clinic year (July, 1925, to May, 1926), paper \$12.00; cloth \$16.00 net. Philadelphia and London: W. B. Saunders Company.

The contributors to this number are Doctors Anderson, Atchley, Barach Boas, Brooks, Cecil, Chace, Evans, Fellows, Foster, Goodrich, Hansson, Held, Holland, Kraetzer, Loeb, Neergaard, Russell, Weintraub.

AN INTERMEDIATE TEXT BOOK OF PHYSIOLOGICAL CHEMISTRY WITH EXPERIMENTS. By C. J. V. Pettibone, Ph. D. Third edition. St. Louis. C. V. Mosby Co., 1925. Price \$3.25.

This edition a considerable amount of material has been added, the entire book has been carefully revised and in all respects brought up to date.

THE SURGERY OF PULMONARY TUBERCULOSIS. By John Alexander, M. D., with introductions by Hugh Cabot, M. D., and Edward R. Baldwin, M. D. Illustrated with 53 engravings and 12 plates. Philadelphia and New York. 1925. Price \$4.50.

This volume, first in the English language, presents the entire subject of surgery of pulmonary tuberculosis with the object of acquainting the medical profession with the principles and practical details that will enable it each year to save thousands of lives which certainly will be lost if surgery is not undertaken. Few physicians and surgeons are aware that surgery is now curing or improving approximately two-thirds of those selected cases of far advanced pulmonary tuberculosis that other methods of treatment have failed to benefit.

FEEDING AND NUTRITIONAL DISORDERS IN INFANCY AND CHILDHOOD. By Julius H. Hess, M. D. Illustrated with 42 engravings in the text and one full page color plate. Fourth revised and enlarged edition. Philadelphia. F. A. Davis Company, 1925.

In this work the object of the author was to place in the hands of teachers and students a manual on infant feeding. Whenever possible the subject under discussion is illustrated in the class room by clinical cases and case records from the teachers personal material.

INTRODUCTION TO OBJECTIVE PSYCHOPATHOLOGY. By G. V. Hamilton, M. D., with Foreword by Robert M. Yerkes, Ph. D. St. Louis. C. V. Mosby Company, 1925. Price \$5.00.

This book is essentially a psychopathologist's account of his studies and interpretations of various modes of human and animal behavior. It is meant to reflect the importance of effecting such studies by the

use of scientifically formulated methods of research as an essential supplement to the always useful but never quite trustworthy methods of field and clinical observation.

SCIENTIFIC NUTRITION IN INFANCY AND EARLY CHILDHOOD. For the student and general practitioner. By Stafford McLean, M. D., and Helen L. Fales, B. S. Philadelphia and New York. Lea & Febiger, 1925. Price \$3.75.

In this work the author has attempted to present the information in a form so complete and simple that works of reference will not be required to afford an understanding of the "Whys" of the feeding methods contained in this work. This has been done in the belief that nutritional workers who have not the advantage of a complete medical education may find it useful for reference.

ARTERIOSCLEROSIS: A SUMMARY VIEW. By the Late Rt. Hon. Sir T. Clifford Allbutt, M. D., St. Martin's Street, London. Macmillan & Company, Ltd., 1925.

This essay was delivered as a lecture to a post-graduate class in Cambridge and is published in book form that it may be found useful to the busy practitioner who has not the time to consult the author's larger book.

TEXT BOOK OF OBSTETRICS. By Thomas Watts Eden, M. D., and Eardley Holland, M. D. Sixth edition with 7 plates and 393 illustrations in the text. New York. The Macmillan Company, 1925. Price \$6.00.

The fact that this work has gone through six editions in rapid succession is sufficient recommendation. The book has been generally revised, new sections have been added, important subjects have been rewritten, and the number of illustrations have been increased by twenty-four.

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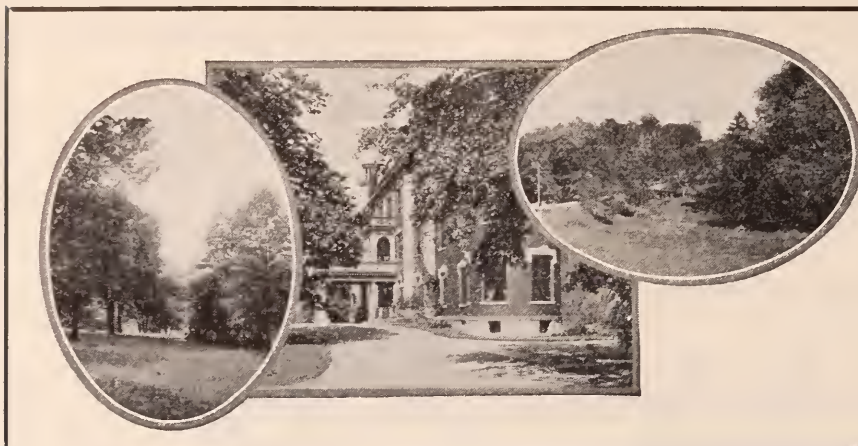
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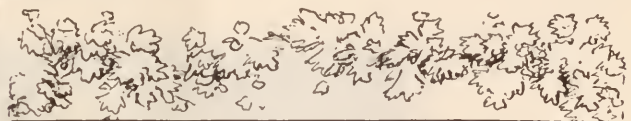
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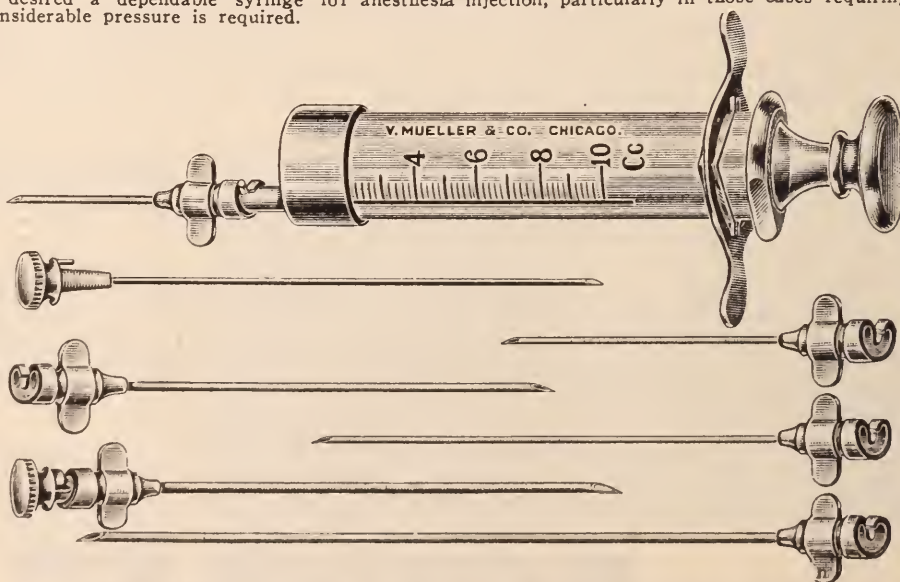
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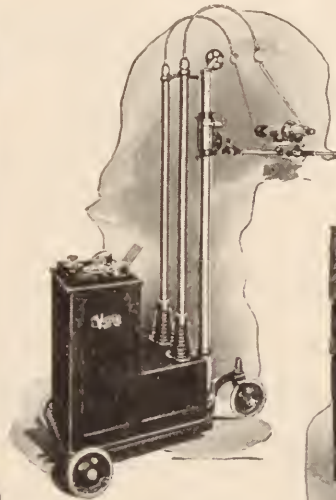


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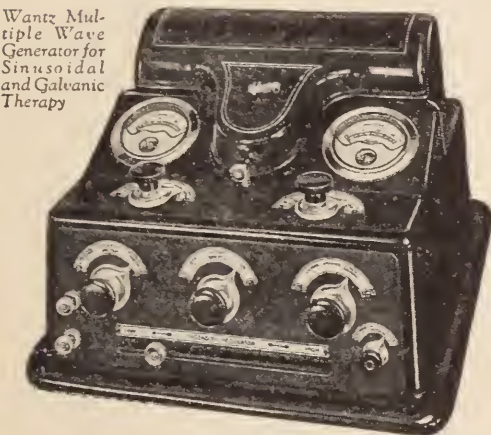
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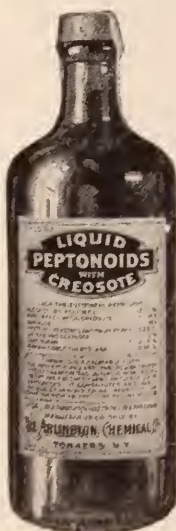
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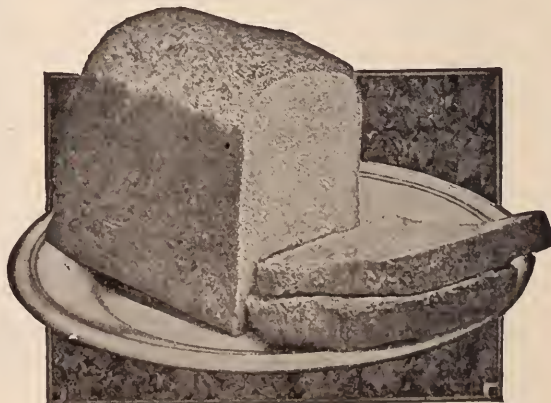
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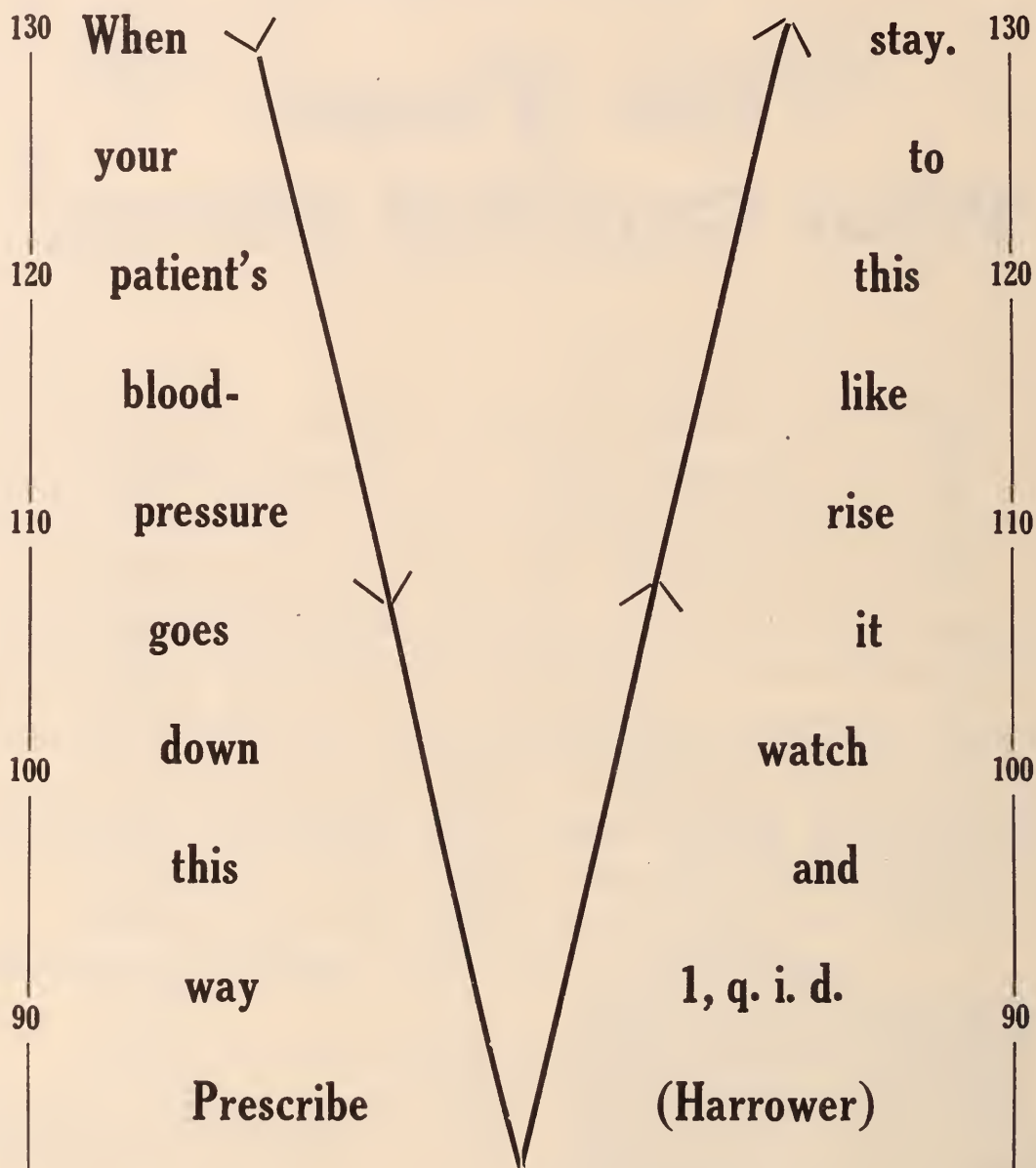
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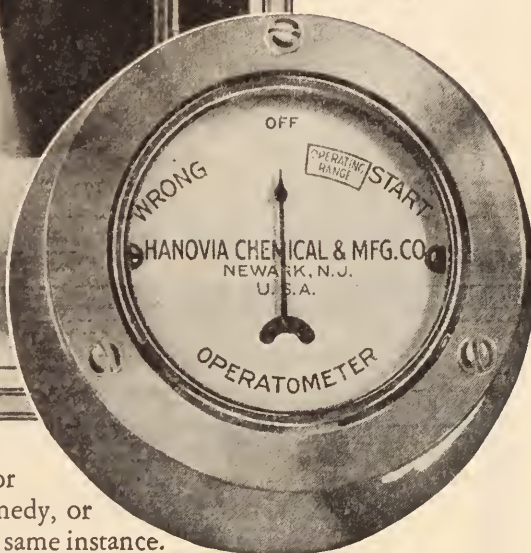
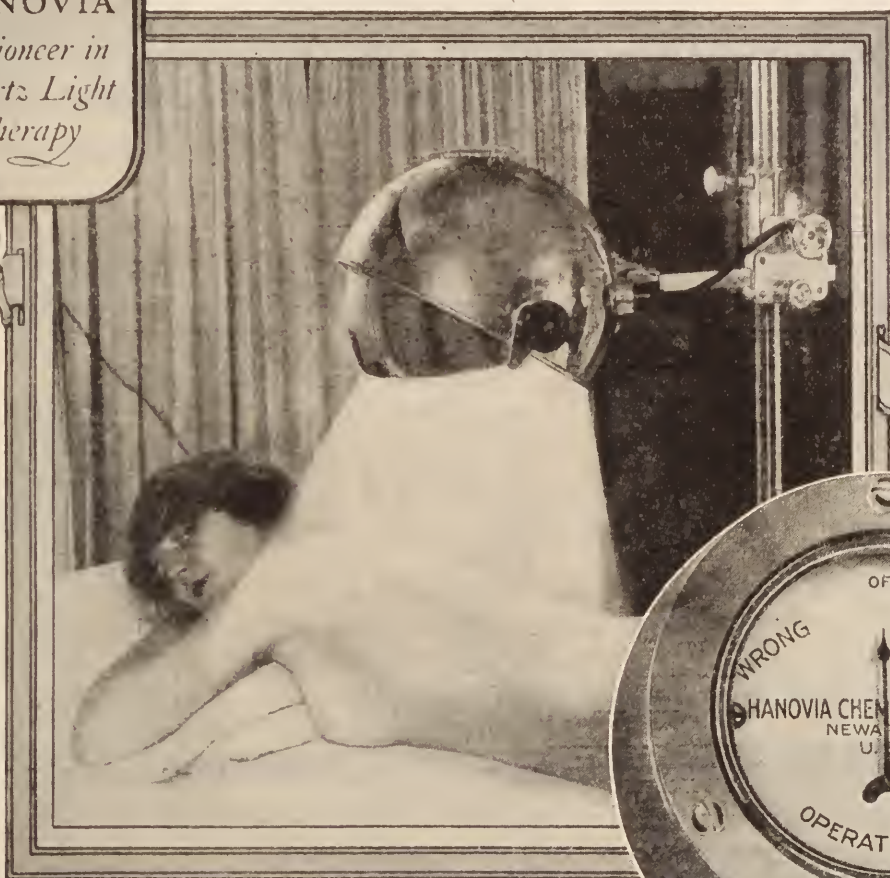
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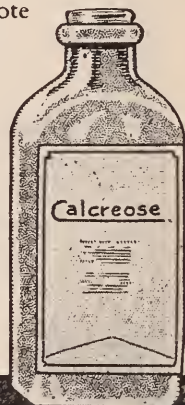
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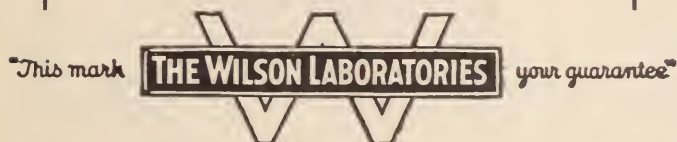
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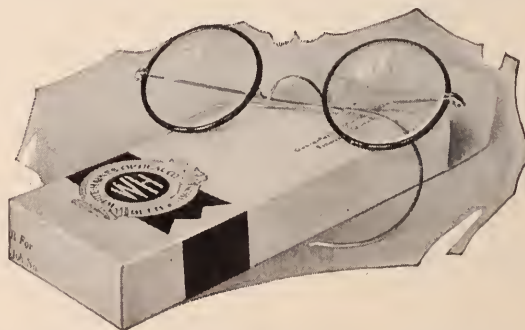
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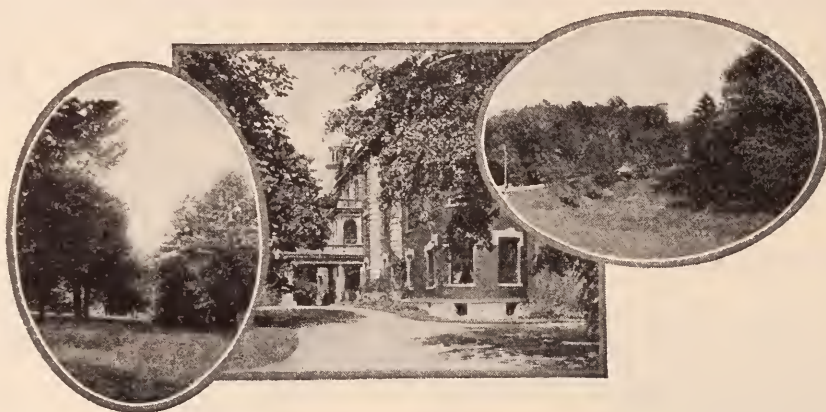
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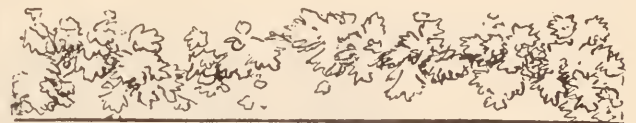
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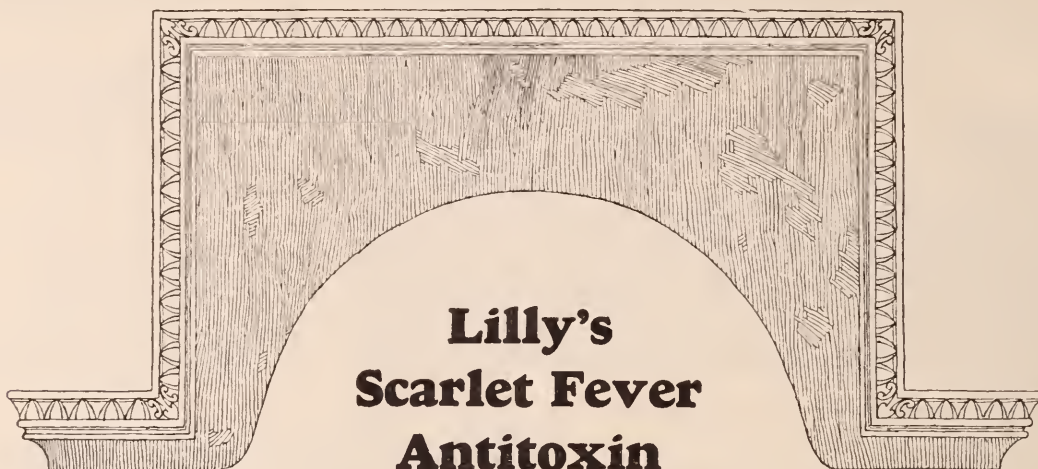
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Columbus: "I don't know where I'm going, but I'm on my way."

Nero: "Keep the homefires burning."

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Book Reviews

THE SURGICAL CLINICS OF NORTH AMERICA (Issued serially, one number every other month). Volume V, Number IV, Chicago Number, August, 1925. 246 pages with 54 illustrations. Per clinic year (February, 1925, to December, 1925), paper, \$12.00; cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company.

The contributors to this volume are Doctors Andrews, Bevan, Brown, Christopher, Dewey, Gatewood, McNealy, McWhorter, Miller, Moorehead, A. J. Ochsner, Bettman and others.

THE MEDICAL CLINICS OF NORTH AMERICA (Issued serially, one number every other month). Volume IX, Number III, New York Number, November, 1925. Octavo of 312 pages, with 72 illustrations. Per clinic year (July, 1925, to May, 1926). Paper, \$12.00; cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company.

The contributors to this number are Doctors Bass, Bastedo, Blumgarten, Cannon, Crohn, Fiske, Gluck, Gray, Held, Herman, Levy, Marcus, Miller, Ratner, and Shattuck.

PSYCHOLOGICAL HEALING. A HISTORICAL AND CLINICAL STUDY. By Pierre Janet. Translated from the French by Eden and Cedar Paul. In two volumes. New York: The Macmillan Company. 1925. Price per set, \$14.00.

Volume I deals with miraculous healing; philosophical methods of treatment; medical moralization; history of suggestion and hypnotism; definition of suggestion; conditions under which suggestion occurs; problems of hypnotism; appeal to the patient's automatism; treatment by rest; treatment by isolation; treatment by moral liquidation. Volume II: Education and re-education; aesthesiogenic agents; treatment by excitation; psycho-physiological methods of treatment; moral guidance.

THE PHYSICIAN'S VISITING LIST FOR 1926. William Wood & Company, Publishers, New York. Price, \$2.00.

THE MEDICAL RECORD VISITING LIST OR PHYSICIANS' DIARY FOR 1926. Revised. New York: William Wood & Company. Price, \$2.00.

This handy book comes to our desk annually. It is arranged for sixty patients per week. The book is also supplied in thirty patient and ninety patient sizes. In this edition the dosage tables, etc., have been carefully revised to conform to the recent revision of the U. S. Pharmacopœia.

ANNALS OF ROENTGENOLOGY. A SERIES OF MONOGRAPHIC ATLASES. Edited by James T. Case, M. D. Volume VI. Skull Fractures Roentgenologically Considered by William H. Stewart, M. D., with Surgical Comments by William H. Lockett, M. D. New York: Paul B. Hoeber. 1925. Price, \$12.00.

This work contains 83 Roentgen Rays studies on

forty-four full page plates and forty-nine text illustrations.

A TEXT BOOK OF PHYSIOLOGY. By William D. Zoethout, Ph. D. Second Edition. St. Louis: The C. V. Mosby Company. 1925. Price, \$4.50.

This book is intended to fill the gap between the larger text and those offering a briefer course.

THE THERAPY OF PUERPERAL FEVER. By Privatdozent Dr. Robert Kohler. American Edition. Prepared by Hugo Ehrenfest, M. D., with twenty-seven illustrations. St. Louis: The C. V. Mosby Company. 1925. Price, \$4.00.

In view of the fact that no work dealing with the problem of puerperal infection has been published in fifteen years this work is very timely. This volume reflects the rational judgment of an experienced physician.

A TEXT-BOOK OF MEDICAL DIAGNOSIS. By James M. Anders, M. D., Professor of Medicine, Medico-Chirurgical College, Graduate School of Medicine, University of Pennsylvania; and L. Napoleon Boston, M. D., Associate Professor of Medicine, Graduate School of Medicine, University of Pennsylvania. Third Edition, Entirely Reset. Octavo of 1422 pages, 555 illustrations, some in colors. Philadelphia and London: W. B. Saunders Company, 1925. Cloth, \$12.00 net.

In this edition the general plan of the previous issue has been retained, and the diagnostic problems of each disease have been brought up-to-date. The book is therefore quite a complete and dependable aid to the general practitioner in his efforts to recognize disease. The work presents a more exhaustive discussion of the diagnostic aspects of medical complaints than is to be found in text books of medicine.

OLD AND NEW VIEWPOINTS IN PSYCHOLOGY. By Knight Dunlap. St. Louis. The C. V. Mosby Company. 1925. Price \$1.50.

This volume contains three public lectures delivered at the Johns Hopkins University and two papers read before the Southern Society of Philosophy and Psychology. The points made in these lectures are of great importance and should be read and carefully considered by every psychologist as well as every other person working in the mental measurement field.

EYE, EAR, NOSE AND THROAT MANUAL FOR NURSES. By Roy H. Parkinson, M. D. Illustrated. St. Louis. The C. V. Mosby Company. 1925. Price \$2.25.

This book is written with the idea of filling a long felt want, so far there is no work available for class room work that may be used in the nurses' training school.

OCULAR THERAPEUTICS. By Dr. Ernst Franke. Translated by Clarence Loeb, M. D. St. Louis. The C. V. Mosby Company. 1925. Price \$3.50.

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